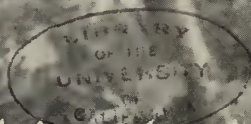


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GIFT
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Cleanings in Tree Culture

VOL. XL. FEB. 15, 1913 NO. 4

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NO. 4

Editorial

DEATH OF D. H. COGGSHALL.

WE were pained to learn that our old friend and valued contributor, D. H. Coggsall, dropped dead the 18th of January while waiting for the train. He was just starting to spend the winter in Florida, as has been his custom for several years. Details will be given later.

DEATH OF GRANDMOTHER WILSON.

OUR readers will remember how, two years ago, on page 659, we showed a picture of Grandmother Wilson in Dr. Miller's family, who had been making honey one of her chief articles of diet for many years, and who, at the age of 93, seemed to be strong in body and mind. We have been in Dr. Miller's home, and have seen this remarkable old lady whose life was indeed sunshine filled with the love of God and the hope of the beautiful hereafter. Dr. Miller thus speaks of her death:

Dear Ernest:—You will recall Grandmother Wilson sitting in her window amid the sunshine and flowers. The sunshine and flowers are still there, but the brightness of her presence is gone. January 24, when within 22 days of being 94 years old, she very suddenly breathed her last without a struggle, at 10 P. M., having retired at her usual bedtime, without having been confined to her bed for a day. I had not realized how empty the house would seem without her.—C. C. M.

HAY OR STRAW FOR PACKING FRAGILE ARTICLES LIKE SECTION HONEY.

ONE of our correspondents, in the Heads of Grain department, Mr. E. F. Robinson, of Canada, makes the statement that "straw once flattened remains so, to a certain extent. . . I always use hay, as it is much more resilient than straw." This is interesting and valuable if true, and we are inclined to think it is true or our correspondent would not say so. Straw, however, is a commodity that can be found in all of the eastern States and many of the western, while timothy hay, the kind referred to, will be found mainly in the northern and eastern States, and a few States east and north of the Mississippi. If hay is more resilient

than straw, let us by all means use it in our comb-honey carriers and in our packing-boxes. The matter is well worth investigation on the part of our comb-honey shippers.

DANGER FROM COLD IN FEBRUARY.

FROM all parts of the country came reports of warm weather in January. In some localities, even in those where flying days in January are usually very infrequent, the bees were able to get pollen, so that brood-rearing was started in earnest. All this means that there is danger of a considerable amount of brood being chilled during this cold weather in February which seems to be quite general.

Another bad feature resulting from excessive brood-rearing in January is that many colonies will run short of stores; whereas if the weather had been cold enough to prevent brood-rearing until later on they would have had plenty.

THE OHIO STATE BEEKEEPERS' CONVENTION.

THIS convention was held at Columbus in one of the recitation halls of the State University, a little way out of the city. There were present Mr. C. P. Dadant, of the *American Bee Journal*; Mr. E. B. Tyrell, of the *Beekeepers' Review*, and Secretary of the National Beekeepers' Association; also Professor W. A. Matheny, of the State University at Athens; and Professor J. S. Hine, of the State University, Columbus. In this connection it is proper to remark that both universities have already installed (or are about to do so) lectures and brief courses in apiculture under the charge of the professors mentioned.

The first session of the convention was quite well attended, made up of beekeepers from various parts of the State, and students in the agricultural department of the college, particularly those who are interested in bee culture. Of course we had with us the Secretary, Prof. N. E. Shaw, Foul-

brood Inspector and State Entomologist in the Department of Agriculture, and his deputy inspector, Mr. Morris, who is also President of the Association. Space will not permit us to give a report at this time.

PARCEL POST FOR BEESWAX.

A FEW days ago a beekeeper sent us five or six pounds of wax by parcel post. The wrapping consisted only of paper and strings; and when the parcel reached us, the wrapping was nearly gone, and the strings just barely held together the cakes of wax. There is no reason why beeswax can not be sent by parcel post provided it is put in a strong burlap sack. The ordinary paper wrapping is insufficient to stand the rough handling by mail. In fact, we may say that beeswax in small quantities should never be sent in any thing less secure than a wooden box or a good strong sack. Paper wrapping, even by express, has been broken too many times to warrant the risk by either express or mail in a paper wrapping.

THE CALIFORNIA WINTER FREEZE AND ITS EFFECT ON THE MOUNTAIN-SAGE CROP.

MR. R. M. SPENCER, of the R. M. Spencer Apiaries Co., of Nordhoff, Cal., writes that the freeze in that State will cut the sage-honey crop more than half. What is true of sage is also true of the sumac, which they get in July. Besides the freeze, they report that they have had no rain up to Jan. 14; and he therefore thinks that California will not do much this year in the way of furnishing sage honey. This is regrettable, as the mountain sage is getting to be a very popular and good-selling honey.

Later:—Almost in the same mail comes another letter, dated Jan. 17, from Mr. Allen Jenkins, of Westgate, Cal., who says they are having copious rains, and everybody is rejoicing. As this is three days later than the letter from Mr. Spencer, we are in hopes that the needed rain has come in his locality as well. See also Mr. Chadwick's statement in his department.

GOOD BEE LOCATIONS IN OKLAHOMA AND KANSAS.

IN an early issue we shall give an account of our trip to Oklahoma and Kansas, and something concerning their great possibilities in the line of beekeeping. Alfalfa is being grown very largely in those two States. Strange to relate, bees and beekeepers have not followed in its wake; yet alfalfa in Kansas and Oklahoma yields honey—not so bountifully, of course, as in

the irrigated regions, but enough so that beekeeping can be made a very profitable industry—especially so as the country is not overstocked. The beeyards will necessarily have to be small, and within short distances of the rivers or creeks and valleys. In Oklahoma, cotton is yielding at present a large amount of honey. The climate of both States is delightful—particularly that of Oklahoma. We do not wonder that there is a great rush of eastern people into the State. There are, of course, "suckers" and fakirs by the thousand. But the State is full of honest men; and if one will keep his eyes and ears open he can learn the truth. Right here let us say that some of the land in both States is comparatively poor, because it is away from water or too near the rock; but in the valleys and along the course of creeks and rivers there are many fine farms, and also some excellent bee country. More anon.

POUND PACKAGES OF BEES NOT ADMITTED TO THE PARCEL-POST PRIVILEGE.

IN this issue, in the Heads of Grain department, page 131, a correspondent asks if bees without combs can be sent by parcel post. In our reply we have explained that this can not be done, and why. The reason we make mention of it here is to make sure that no one make the attempt to send a pound or two of bees by mail with the same result that happened 35 years ago, when even queen-bees and their attendants were barred from the mails. While the local postmaster would refuse to accept such a package, he *might* let it go through, with the result that we might have serious trouble on our hands. The Postmaster-general, or, rather, the Third Assistant, has more authority than any Representative or Senator, in that he can put a ruling into effect that might make or unmake the entire queen business in the United States. Let us proceed cautiously; and when we have perfected a combless cage by which we can send bees by the half-pound, pound, or two or three pounds by express, we shall then be in better shape to go before the Department and ask for a ruling than we now are.

Later:—The expected has happened. Bees sent by parcel post in a poorly-made cage "broke loose." Particulars in next issue.

REPORT OF APIARY INSPECTOR OF TENNESSEE.

IN the eighth annual report of the Tennessee State Board of Entomology, Dr. J. S. Ward, newly appointed as State Inspector of Apiaries, gives a good report of the first six months of his commission. The month of June was spent in inspecting in

Davidson, Maury, and Rutherford counties, only one yard being found infected, and this was treated.

The Tennessee agricultural train started on its tour over the State July 1, and on July 4 Dr. Ward was instructed to join the train with an exhibit which he had hastily prepared, consisting of an observatory hive, supplies, various races of bees, etc. The bees actually working proved one of the most attractive exhibits of the train. Demonstrations and instructions in beekeeping were given at every stop, and a hundred open-air lectures were given besides.

The inspector has found some trouble in getting reports of disease, due to a possible fear on the part of the owners that the colonies may be destroyed, or because of discouragement or indifference.

The work for the winter includes a continuation of the illustrated lectures and demonstrations in the field, and an energetic campaign is to be carried on for the purpose of getting statistics in regard to bees which will include the name and address of the owner, the number of colonies, source of honey, whether comb or extracted or bulk comb honey is produced, average yield per colony, diseases, etc.

OUR APICULTURAL SCHOOLS: ARE THEY MAKING MORE COMPETITIVE PRODUCERS RATHER THAN HELPING THOSE ALREADY IN THE FIELD?

THE initial article in this issue, under the heading of General Correspondence, by Mr. J. L. Byer, discusses the question whether the apicultural school at Guelph is not making a mistake by making more beginners when it should rather take those we have and make better ones of them.

Mr. Byer and Mr. Holtermann, as well as the editor of the *Canadian Bee Journal*, apparently feel that these new recruits do not fully understand the difficulties that confront the beekeeping industry of the day. From their point of view these beginners go into beekeeping, run up against foul brood, then go out of the business, leaving the industry in a worse condition than before.

Let us assume for argument's sake that the apicultural schools at some of our agricultural colleges are making recruits rather than instructing the beekeepers already in the field. We have visited practically all such schools in the United States and Canada; and the brood diseases, or any other bee disease, so far as we have been able to see, has been properly presented to the students. Not only that, but the schools have taken pains to point out fairly and candidly some of the difficulties, so that the novice,

when he takes up beekeeping, will be informed in advance of the problems that he will have to solve. The student comes in actual contact with an instructor who thoroughly understands the business. In many cases they have access to a full equipment. The practical management of bees is fully explained so that the novice or old timer can go out into the world, learn how to handle them, and then go into the business with a better knowledge of when and how to proceed. Such a beginner, ninety-nine times out of a hundred, will be more careful about letting bee disease get into his apiary than the average "old-timer" who does not fear foul brood, and who feels that he can cure it when it does come. It is a lamentable fact that many of the professional beekeepers either do not care if they get disease or do not understand; and if our agricultural colleges did nothing more than to stir up these men to the real danger that lies before the practical honey-producer, they will have served their purpose. They are doing this very thing.

But, as Mr. Pettit points out in his reply to Mr. Byer, his agricultural school is composed largely of students *who are already in the business*, to the extent of nineteen out of twenty. What is true of the school at Guelph, Canada, is to a great extent true of similar schools in the United States. Having visited all of them, and having seen the class of work that they are doing, we are convinced that they are putting the industry as a whole on a safe and sane basis.

It is exceedingly difficult to get an appropriation in the first place sufficient to carry on apicultural schools with a competent man or men in charge; and we can not but regard it as unfortunate that criticism of this sort should arise at this time; for if there is any institution that is protecting the beekeeping industry, outside of our books and journals and our foul-brood inspectors, it is our apicultural schools. The more of them the better. We believe we have traveled over more bee territory in the United States than perhaps any other person in this country. We have just finished a trip of 2500 miles visiting beekeepers and two institutions where bee culture is being taught. Careful examination of all the facts in the various localities convinces us that we have *ten times as much to fear* from the inroads of foul brood and price-cutting from the don't-read-the-journals class of beekeepers as from any other class we have to deal with. Those who do not read a bee journal probably do not read even agricultural papers, and much less are they in touch with our apicultural schools.

Stray Straws

DR. C. C. MILLER, Marengo, Ill.

THAT symposium of 40 years ago, p. 97, takes you back, doesn't it? If those 50 or more young fellows could meet now, what an interesting convention they could hold! I'd like to be there to hear them.

OH YES! Alfred J. Fisher, p. 100, there can be abundant crops of white clover without sheep. It is my chief dependence as a honey crop, and I don't know of a sheep within three miles. For best results white clover must be grazed to make its season longer; but I don't know that it makes any difference whether it is grazed by sheep, cows, or some other stock.

THIS kink is from Arthur C. Miller: "Wrap a queen-cell in a piece of thin foundation, bringing it snug to the cell near the tip (which just protrudes), pinching the foundation together over the cell-base, when the cell will be safe from attack, no matter what colony you give it to." Handy in case a cell has been injured, or where a colony is not yet fully conscious of its queenlessness.

THE windbreak question is well discussed, p. 38 and p. 55, and that reminds me. Years ago my apiary was surrounded by growing corn and dense shrubbery. In the center of the apiary, combs melted down and the honey ran on the ground. It was not caused by the direct rays of the sun, for the sun never shone on the hives all day long. It was because the dense growth prevented the circulation of the air. If that kept the hives warm in summer, why should it not have the same effect in winter?

MR. EDITOR, I have a large stock of ignorance about outdoor wintering. So I may repeat, in all good faith, the question I asked on page 74, whether you ever saw a solid comb of honey projecting down through the cluster of bees in winter, applying it to bees wintered outdoors. Reasoning upon the case I should say that the same rule would hold outdoors as in cellar; and so while empty combs would be found below the cluster, the bees would never allow honey below the cluster. But reasoning is not always safe, and I may be utterly wrong. Can we have a positive statement of fact? How is it at Medina, and where J. L. Byer lives? [We can not answer your question directly, but we do know this: In early winter, when a cold snap comes on, and after the bees have been fed up so that their combs are well filled except the winter nest, you will very often find the cluster clear up to the top of the brood-frames and over

them. An examination shows that the bees are above the honey, because we can look under the cluster when the sunlight is right. Yes, sir, 'e; we feel very sure we have had many cases like this where the combs of honey project below the cluster. It could not be otherwise, or else the cluster would not be at the top. Now for your side of the proposition, we may say the *normal* position of the cluster is down near the bottom-bars next to the entrance, with the honey above.—ED.]

LOCK-CORNERING of hives, or dovetailing, mentioned p. 91 as one of the improvements of the past 40 years, recalls the prophecies that were made upon its introduction that it would be an utter failure. Hives with that feature could not last; the corners would pull apart; the moisture would work in, rotting the wood, etc. But the hives didn't seem to mind the criticism, and today not many would want hives without the condemned feature. [Yes, we remember very well the prediction, and how we were scored for putting out the lock-cornered hive 25 years ago; but they were never more popular than now. All the manufacturers in the country have adopted the principle. It was a case where theory did not "dovetail" with actual practice, because the "dovetailing" actually held. We have now in use hives that were never painted, and which are still good for 25 years' use so far as the dovetailing or lock-cornering is concerned.—ED.]

ARTHUR C. MILLER says, p. 81, "Another word about soft sugar and I am done—no, not out of sputter, but just holding up for a future time." That recalls a story of another individual who was "not out of sputter," but who was short on another commodity, and who was "just holding up for" a fresh supply:

A wide-awake five-year-old had been giving his mother all sorts of trouble one day when she had company. Finally she shut him up in a closet. His screams could be heard a mile or less. Suddenly they ceased, and there was a dead calm. His mother waited in vain to hear him say, "Mama, I'll be good." Visions of her darling, dead from suffocation, floated before her, and she opened the door, only to find him calmly seated on the floor. "What are you doing, my son?" "Nothing. I spit on your new hat; I spit on your new coat; I spit on your new dress; and I'm just waiting for more spit."

SIFTINGS

J. E. CRANE, Middlebury, Vt.

On page 755, Dec. 1, Dr. Miller and the editor discuss shipping cases somewhat, and tell how to ship safely. I want to add that it requires much more careful packing to ship honey safely in late autumn and early winter than in warm summer weather.

* * *

"He was an honest man and a good citizen" is said of J. S. Harbison, page 679, Nov. 1. Why? Because he believed in the fatherhood of God and the brotherhood of man, and he has left to the world what is worth more than heaps of gold and silver.

* * *

"Darn a veil, anyhow!" says Arthur C. Miller, page 809. Thank you. That is about the way I feel. I have submitted to hundreds of stings rather than wear a veil. To have that veil everlastingly between your mouth and a nice tidbit of honey as you open a hive, or a fat strawberry, or a plum, or a cluster of grapes, is provoking. But if you must wear one, there is nothing better than the one Mr. Miller describes.

* * *

I am glad Dr. Miller is going to try extracting honey, page 790, Dec. 15, with part of his bees. There are several advantages in doing so. There is lots to learn, and then you will find some customers who will pay a good price for it just because *you* produced it. And, again, your supply of wax to be worked into foundation will be largely increased. We have between two and three hundred pounds on hand ready to send away to be made into foundation. That makes quite a saving in supplies for the summer of 1913.

* * *

In the discussion of flowers Mr. Ryan and Lovell agree on one thing: "that the poppy contains no nectar." Shall we ask why? While in the southern part of the State last summer a gardener showed me a long bed of poppies, and said that bees worked freely on them in the forenoon, but that large numbers of the bees were so overcome by the narcotic element of the plant that it would be hours before they would all be able to return to their hives. Now, we know that honey often, if not always, partakes more or less of the nature of the plant from which it is gathered. Thus the honey from the thoroughwort is quite bitter. That from the white daisy tastes as the flowers smell; and may we not readily conclude that, had the poppy produced honey, it would have contained so much of the

powerful narcotic principle of these plants as to be destructive to bees where it grows freely in the grain-fields, as in many places in Europe? How kind of the Author of nature to withhold nectar from the poppies, and give instead a good supply of pollen!

* * *

A SUMMARY ON WINTERING.

The subject of wintering bees in the colder parts of the country is not as well understood as it should be. I wonder if I can sift out some of the main facts so a child can understand them.

If the bees of a given colony have good stores of honey or sugar syrup there are just two other facts to be remembered—*protection from cold, and dampness.*

Why should they be protected from cold? 1. Because they consume very much less honey, often not more than one-half; 2. Because, if they consume less honey, and have less cold to overcome, they will live much longer, and will be stronger in the spring; 3. Because, if less honey is consumed, less moisture will be generated by the bees, to be gotten rid of in some way.

How can bees be protected from the cold? By placing them in cellars or special repositories, or by protecting them out of doors in clamps or by warm packing.

Why should bees be kept dry? 1. Because if the inside of a hive is damp, the combs and especially the pollen in the combs will mold; 2. Because, if left where it is very cold, the moisture may condense and freeze on the combs so as to starve the bees when there is plenty of honey in their hives; 3. Because, if moisture is allowed to accumulate inside a hive it is likely to be condensed on the combs, and to be absorbed by the honey, making it unfit food for bees, and often producing disease.

How can this moisture be disposed of, and the hives and combs kept dry?

By giving a large lower entrance as advised by Arthur C. Miller, Allen Latham, and others. By giving a smaller lower entrance and some upward ventilation, thus producing a draft through the hive, and carrying off the moisture given off by the bees. By a very small lower entrance and warm packing, and absorbing material around and above the bees that allows the moisture to pass through while it retains the heat.

Perhaps I should add to this that bees in cellars or special repositories should be kept at such a temperature that they will remain in a semi-torpid condition.

Beekeeping in California

P. C. CHADWICK, Redlands, Cal.

Mr. A. B. Marchant, Jan. 15, p. 45, gives some splendid thoughts on knowing one's location. Beekeepers could, to a very great extent, profit by studying their location and its resources.

* * *

Mr. Geo. L. Emerson reports bees wintering poorly in the vicinity of Fullerton. In this locality they are in better condition than for the past two seasons; but what later developments will bring, owing to the freeze, is hard to tell.

* * *

I miss the writings of E. M. Gibson, of Jamul, Cal. Mr. Gibson writes me that he has sold out and is living in San Diego. There are others who might take his place, and help keep California in the rank it deserves before the beekeeper's world.

* * *

Referring to what you say, Dr. Miller, p. 40, Jan. 15, I am contending that bees lose time guarding the entrance when there is a good honey-flow on. At such a time you could take the lid off and leave it so for a week without doing any harm. The original discussion was over a colony that built up very rapidly in the spring with a very large entrance.

* * *

Almost immediately following the freeze we were treated to a fine rain. In some localities the downpour was heavy, and more than three inches fell—the heaviest being in the vicinity of Santa Barbara and Ventura. In this locality we received only one and one-fourth inches. However, it is sufficient to start the early spring flowers that give us an abundance of early pollen.

* * *

The first of the year I started to keep a record of the number of days during the year when the bees were able to find something to work on. By the end of the first week every thing was so badly frozen that I gave it up. The twenty colonies in my back yard have found pollen somewhere every day they could fly; but where they found it since the freeze I have not been able to learn.

* * *

Conditions are somewhat uncertain as to the damage to our honey-plants; but developments have reached a point where I feel safe in making some statements. The orange trees are frozen very badly in places, while in more favored localities the damage is much less. Where the trees are the worst frosted, the bloom will be materially de-

creased; but in the more favored places there seems to be no reason why there should be any shortage in bloom. If, perchance, the bloom should be reduced one-half, there would still be all our bees could handle. Some believe the button sage is killed. I did not share this opinion for a time; but after carefully examining it in several localities it seems almost certain that much of it is entirely destroyed so far as this year's bloom is concerned, though I believe we may see some bloom if we are favored with good rains from now on. The white variety is not injured, it being of a much more hardy type. It stands the cold of an altitude of more than six thousand feet. The eucalyptus, which is of so much value as a winter stimulant, is very badly frozen, and much of it will die. The peppers, grevillas, and acacias—in fact, every thing, is frozen; but the oranges seem at this date to have stood it better than most other trees.

* * *

A COLLAPSIBLE VEIL MOST DESIRABLE.

On page 810, Dec. 15, A. C. Miller discusses bee-veils at length, and finally decides on one that would not appeal to me for a minute. I would rather have one I can stick into my pocket, so I will not look like an old maid with a bird-cage, when going from place to place. Silk bobinet veiling, with the lower skirt of cheesecloth, makes a dandy. Put a shirr-string in the top to draw it around the hat crown; bring the skirt down on the shoulders, the slack around in front; then tuck it in your shirt-front. I have worked many a day in this way, and did not get stung. It would be torture to work all day with a coat on, such as is shown in the illustration. Mr. Miller also says, "But you will have a more pleasant time if you keep decent, good-natured bees, and dispense with a veil altogether, or almost." That was my idea when I came to California. I laughed at my uncle for wearing a veil so much; but he said, "Never mind; you will come to it." We started extracting. I was uncapping and throwing out, he taking off and wheeling in. Near 3 P. M. the old gentleman was getting tired, so I offered to change with him, which I did. Wheelbarrow and smoker in hand, I rushed out, and very promptly I rushed back, perfectly in love with a veil, and have been ever since. I do not care how gentle bees are, when you get them stirred up with good lively extracting operations there is going to be a good demand for a veil.

Beekeeping in the Southwest

LOUIS SCHOLL, New Braunfels, Texas.

RESULTS OF GOOD CROPS.

We are all acquainted with the results that follow the making of goods and profitable crops. We all know what an "invigorating" effect it has on us, how it livens us up, and spurs us on to do better things, and to greater interest in those things that concern us in our chosen pursuit.

These things are mentioned for the reason that the writer is looking forward to the time when beekeepers will get together more often, and take into consideration some of the most important matters that need immediate attention. It has been, and is yet, a hard matter to do very much in this direction during years that have not been profitable to the beekeeper. In the first place he has lost much of the interest in the business; and even if he has not, the fact of his being rather short of pocket money as a rule does not permit his going to any meetings that may be held to discuss these important matters. How different it is, though, when he can jingle the bright coin with which his pockets are heavy!

FAVORABLE PROSPECTS.

Although some portions of the great Lone Star State suffered somewhat severely the past season, other parts of it obtained very fair crops of honey, especially throughout the cotton belt. There was considerable cotton honey produced during the 1912 honey season, and this helped materially in bettering the final crop report for one of the poorest seasons that we have experienced for many years, taking the entire State as a whole.

It is gratifying indeed, however, that the bees are, almost universally, in excellent condition for next season, and wintering so well that they will be in fine order generally for the next season. Adding to these excellent conditions the prospects for a good honey season this year, the beekeepers are expecting some big harvests to make up for the losses, in some localities, the past two seasons.

The late fall and winter months have been bountiful in good soaking rains, and these have been pretty general all over this large State. This, followed by an early spring and a dry summer, interspersed with a few good rains, is what the beekeeper terms "a good thing for a big honey yield." Just how near we shall get to these ideal conditions, it is too early to tell now; but it is to be hoped that the present excellent conditions will continue and even improve. One of those "bumper crops" we used to

speak of in years gone by would put new life into the beekeepers; and such new life would show its effect in many ways, with the result that more interest would be taken to make beekeeping better than it has been the last few years.

* * *

BEE INSPECTION IMPORTANT.

One important matter concerning the beekeepers, not only of Texas, but all States and countries, is that of careful, systematic, and effective inspection of apiaries for diseases of bees. The time has come when we must be exceedingly careful about such a thing as running the risk of getting foul brood or any other contagious diseases into our apiaries. In this case an ounce of prevention is better than a pound of cure.

The next question then is, how we can best arrive at methods and means for taking the proper steps to accomplish results that will give us proper protection.

Just such questions as this should be taken up at various gatherings of beekeepers all over Texas at the present moment. And not only is this of exceeding importance in localities where bee diseases already exist, but just as important where they are not already present. The one idea in the mind of every beekeeper should be to keep it away, and not wait until it has appeared in the neighborhood. We shall not attempt to say how far away we should keep it; but every beekeeper knows that the further such dangerous diseases are kept away the better.

It is hoped, therefore, that the beekeepers in every State will get together and consider what may best be done to evade any of these dreaded troubles altogether, or to get rid of them after they have come into a neighborhood.

It should be remembered that Texas has a State foul-brood inspector in the person of the State Entomologist, at College Station. There is no doubt about his doing what is proper in dealing with such matters, and looking after the welfare of the beekeepers of Texas. But it should be also remembered that it is up to the beekeepers to lend him all the assistance in their power, and to aid in procuring the necessary funds with which the work is to be done. And it is also the duty of beekeepers of this State to see whether or not these duties are performed properly and to the best advantage for the beekeepers. They have a right to expect this in return for the efforts that may be made by them.

Conversations with Doolittle

At Borodino, New York.

LOOK AFTER THE COMBS.

"Last fall I had many colonies weak in bees, so I doubled them up until I thought all were strong enough for winter. How can I best preserve these combs till I wish them for use again? Would new comb be preferable to the old, no matter how good and straight the old combs are?"

It is best to keep a careful lookout for every bit of wax in the shape of burr-combs and brace-combs, and all scrapings of honey-boards, frames, and hives. All combs which are crooked, or which have been damaged through breakage or from mice, should be rendered into wax. When saving out these pieces, it should be borne in mind that the *choice* comb is so valuable that its destruction shouldn't be entered upon hastily.

In order to determine the worth of nice straight worker combs, it is well to remember that many experienced beekeepers think it very profitable to purchase full sheets of comb foundation at the rate of ten cents per frame. This, added to the cost of transportation, and the time required to wire and fasten the foundation in the frames, would make the cost of a frame filled at least 13 cents. The same frame filled with a good worker comb is certainly worth as much, and in my opinion more. The wax that can be gotten from it would hardly bring 6 cents, and this must still be discounted on account of the labor involved by way of rendering and cleaning the wax. My conclusion is that combs in an eight-frame Langstroth hive are worth at least 50 cents more for use as combs than they are for the purpose of wax. To my mind it is worth while to know (when one has frames of nice worker comb which can not presently be made use of by the bees) how to keep them in a good state of preservation. Mice and the larvæ of the wax-moth are the enemies that work the most destruction where the combs are kept in a warm dry place; and if kept cold and damp, the mold and soured pollen come in as deteriorating influences. To guard against the deterioration or destruction of combs, I have experimented quite largely, and recommend the following:

If one has a bee-cellar that is mouse-proof, and cool and dry, the hives of comb can be set therein with every assurance that they will keep well. But any warm damp cellar is to be avoided, lest the combs become moldy with soured pollen. It appears that a somewhat high temperature is necessary for the propagation of wax-moths, for I have never known them to breed in

combs placed in a cellar that is fit for them to occupy; and therefore I feel it safe to say that any good cool dry cellar would be a sure protection against the moths; and if such a cellar is not already mouse-proof it can be made so without any great amount of work. By placing hives of combs over strong colonies of bees as soon as the warm season opens, so that the bees can have free access to them, neither mice nor moths will be able to touch them. From one to six hives of empty combs can be given to good colonies. Precaution only need be taken that no more hives be given than the bees will go through in sufficient number to go over all the combs. When any one can use strong colonies for this purpose, it is the safest and best method; for the bees not only protect the combs completely, but also clean them to a very great extent, so that they are put in better condition for preservation by other methods. It is not practical to store combs over colonies when working for comb honey. In such a case the combs would have to be removed at the beginning of the honey-flow, else no good section honey could be obtained. But where working for extracted honey, they can be used, or the filled or partly filled combs reserved for feeding purposes for either fall or spring.

But the way I have used the most of them, and which has pleased me the best, and a way which has proven entirely effective against the moths, is to hang my combs up to the light and air with a space of from 1½ to 2 inches between each comb and its neighbor. Especially is this the best way for all combs which have had brood reared in them till they have become toughened by the cocoons accumulating from many generations of brood. Such combs are most freely used by the moths. If the combs are new, and of clean white wax, the light seems to have a deteriorating effect upon them, causing them to become brittle, and to break or crumble when handled, though the bees seem to use them as well as ever during hot weather. Knowing how well combs keep when stored in this way, and for practical convenience in following this plan, racks to support them were made in my shop overhead. These were placed so as to admit freely the top-bars of my frames. Windows were placed conveniently for light and air; and by using screens, neither bees nor millers could have access to these combs. These racks, being so far from the floor or any other accessible place for mice, afford an ideal place for keeping all combs not in use.

General Correspondence

**SHALL WE ENCOURAGE MORE TO KEEP BEES?
OR SHALL WE RENDER MORE HELP TO
THOSE ALREADY IN THE BUSINESS?**

BY J. L. BYER

The December issue of the *Canadian Bee Journal* reprints an article contributed to the *Farmer's Advocate* by our well-known friend R. F. Holtermann. The editor of the latter paper asked for a summary of the prospects of beekeeping in Canada, and the article in question deals largely with that phase of the industry; and while the views expressed may not be in harmony with the ideas of all others engaged in the business, they are, nevertheless, very interesting, and worthy of our sincere consideration. After commenting on the fact that European and American foul brood are a serious menace to successful beekeeping, he says, "Just now, it seems to me, to advise men either in Ontario or Quebec to go into beekeeping is like advising a man to go into hog-production with an outbreak of hog cholera in the vicinity, only far worse." Referring to the claim that these diseases are not checked more effectually than is the case, because of lack of funds from the Province to fight them properly, he further says: "I shall let the public judge as to the wisdom of such a policy, and whether it is wise to seek to develop, at expense, the industry on the one hand, and allow those already in it to be wiped out on the other for lack of funds."

The editor of the *Canadian Bee Journal*, commenting favorably on Mr. Holtermann's article, says, among other things, "Our officials are not to blame. On the contrary, they fully recognize the impossibility of checking the scourge with the scanty means placed at their disposal by the Government. If, however, the *whole* of the funds now being spent for apicultural purposes in the province could be used for taking vigorous repressive measures against bee diseases, better results would ensue."

Let me digress just here to state that European foul brood is the disease that Mr. Holtermann has mostly in view, and I presume the editor of the *Canadian Bee Journal* also refers particularly to this brand of foul brood, as it is generally admitted that the old-time variety we have been so familiar with is gradually being cornered, and has lost its terrors for most beekeepers.

Returning again to the article in question, let me say that I have quoted from it, because in reading it one can not help seeing at once that the author believes it is a

fallacy to try to persuade others to go into the business of beekeeping when those already in the business are up against such a serious menace as foul brood. And right here let me add that, during the past season, when traveling, meeting in convention, or in other ways associating with the majority of our producers, I found by actual inquiry that nearly all are of the same opinion as our friend in this matter. Ever since the Provincial apiarist has been appointed, I have been a loyal supporter of him, and to-day I believe we have a man in the position whom we have reason to be proud of; but at the same time there is no use in denying the fact that the work being done in connection with apiculture, in so far as practical help to those in the business is concerned, is not what most beekeepers were expecting when the government decided to open a department of apiculture at the Agricultural College. No doubt the same opinion is held by many beekeepers in the different States that have departments of apiculture; but as I am not so well acquainted with the producers so concerned, I can not speak with authority for them. When the editor of the *Canadian Bee Journal* says that if the *whole* of the funds now being spent for apiculture were applied to foul-brood suppression, I do not think he means to imply that the department should be abolished, but, rather, that as much as is now being granted for *all* the work should be given for foul-brood suppression alone.

I have already referred to the fact that the majority of the beekeepers believe that less encouragement should be given to those contemplating going into the business, and that more help should be given to those already established. This being a fact, it may be asked why more has not been said about it in a public manner; and for answer I would say that rather short crops, with an unlimited market for the same, has caused honey to reach a high-water mark here in Ontario, so that any real "kicking" is almost an impossibility at present. But let the present "boom" end, a series of heavy crops follow with attendant lower prices, then surely there would be a "howl" against any systematic propaganda for developing *more* beekeepers.

To those who have read thus far, this will no doubt seem but a bit of carping criticism; but I wish to assure one and all that nothing is further from my mind; for, regardless of what any of us beekeepers think about the matter, so long as our Govern-

ment fosters any industry in agricultural colleges, or in any other way, so long we may expect to see systematic instruction given in that industry; and all who will are at liberty to take advantage of that instruction. At the same time, care should be taken not to exaggerate the possibilities of the calling as an income-getter, and especially should all be warned of the very serious problems confronting the would-be beekeeper; for when all is said and done, even the most enthusiastic beekeeper must admit that our business is one peculiarly fraught with dangers, and often unexpected difficulties, all out of proportion to any other rural industry.

Again, let us remember that, in this matter of giving encouragement to beginners, the Government or its officials are not the chief sinners by any means. Without any desire to try to resolve ourselves into a mutual-admiration society, I would ask the question, "Are not beekeepers as a class the most unselfish lot of mortals that ever existed?" Do you ever feel like "turning down" some eager (perhaps needy) young fellow when he comes asking, in all earnestness, something about your business—the business you love? If you are feeling a bit out of sorts when you start to answer these questions, perhaps you may try to squirm out of them by saying, "What other business men are inclined to tell the secrets of their business and ready to lend a helping hand to others?" The very fact that you thus hesitate in answering, proves the truth of my first question. After all is said and done, *that very trait* in the make-up of most beekeepers has been the means of my getting so much enjoyment out of life during the past few years that we have been making our living from the bees alone. Of course, there are some *few*, even among beekeepers, who are as "business-like" as lots of people in other professions; and they will refuse to tell any thing about their methods, and will treat almost with contempt any one who would be so foolish as to ask for help. If you are not one of that class (and I don't believe you are), in all honesty how do you like to rub shoulders with such men when at conventions or other places? And, by the way, very few, like the ones described, ever come to conventions or attempt to mingle with the beekeepers at large.

Yes, life consists of more than *business*; and while self-preservation is, we are told, the first law of nature, yet none of us liveth to himself; and, generally speaking, all we can do for the other fellow will return us good interest—if not in dollars, in some-

thing worth much more than can be estimated by the currency of our land.

Mount Joy, Dec. 29.

[Deeming it no more than fair to let Mr. Pettit make his own comment on the above, we submitted to him as well as to Mr. Byer a proof. Mr. Pettit says:]

I don't know that there is very much to say, as Mr. Byer has answered himself pretty well before he has finished; but it does look to me like setting up straw men for the fun of knocking them down. First, the implication is made that I am inviting people to go into beekeeping instead of helping those who are already engaged in the business. In reply, let me say that I have been repeatedly asked by my chief to prepare a bulletin especially for beginners in beekeeping, but so far have not had time to do so. My work has been fully occupied in an educational campaign, principally for those already engaged in beekeeping, and more particularly for the benefit of those who have or expect in the near future to have foul brood to contend with. I can say, without fear of contradiction by those who know the facts of the case, that 19 out of 20 of those receiving benefit from the expenditure of government money for beekeeping in Ontario were already engaged in keeping bees before this department was established. The whole trend of educational work is along the line of making them better able to contend with foul brood.

Surely Mr. Byer is joking when he speaks of the advancing prices of honey as a "boom." It is not keeping pace with other food products, and there is no indication of their prices being reduced in the near future.

Mr. Byer makes the statement that during the past season, "when traveling, meeting in convention, or in other ways associating with the majority of our producers," he found by actual inquiry that nearly all are of the same opinion as our friend in this matter. Now, there are 10,000 beekeepers in Ontario, and I imagine I am safe in saying that at least half of them are producers of honey; but supposing only one in five were a producer, Mr. Byer was not on government work of any kind except to attend two or three demonstrations in one county, and at the Toronto convention in November. How, then, did he come in contact with 2,000 Ontario beekeepers, and have the opportunity of questioning each one as to his opinion of the work done by the Ontario Agricultural College in order to find that the majority of them thought as he does in

the case? As a matter of fact I receive a number of kind letters of appreciation from Ontario honey-producers, but very few indeed of the nature of Mr. Byer's letter.

[We hardly think that Mr. Byer meant that he had actually questioned over half of the producers. By "majority" he probably had in mind those more prominent in the industry. See editorial.—ED.]

HOW A BREEDER SELECTS A GOOD QUEEN

BY H. G. QUIRIN

In a recent issue of *GLEANINGS* I note that some of the breeders are asked to tell how to judge a queen. In judging a queen, a breeder is often governed by principles difficult to express in words. A queen in a cage can not very well be judged, as all one has to go by is her looks; and one can tell no more about a queen from her looks than how far a toad will hop from its looks. It is true we can tell where the queen is of good size, and is properly proportioned; also whether she is spry and active, and we can make a good guess as to whether she is laying or not; but for any thing outside of this we must go to the hive where she is doing such duties as are required of her, and where the qualities to be desired in a queen are in evidence. If I were selecting queens for my own use I would not ask to see the queen at all, but would judge her by her colony.

In selecting a breeder, we naturally have to select a queen whose progeny possess such markings and qualities as are designated by Mr. Purchaser. Such breeders are almost always selected from queens at least a year old, as otherwise we can tell but little about their working quality. However, prolificness, gentleness, and ordinary working quality can be foretold in queens much younger than this. There probably is no one quality that pleases the masses more than an extraordinarily prolific queen; and as a rule it is these populous colonies which roll up the most surplus.

One thing about the size of a queen. The larger the queen, the more pleased is the customer; yet this larger size does not necessarily mean that the queen's prolificness is in accordance with her size. In fact, it often happens to be just the contrary. I call to mind instances in years gone by when, in coming across an extra-strong colony, I would invariably spot them as breeders, providing the bees possessed the required qualities. However, just as often as not when I looked for the queen I found her to be a rather undersized individual, and there-

fore she would be rejected as a breeder. I have since often thought that I would at some time try such a queen as a breeder for at least a few batches of cells, for it is my opinion their daughters would be good and of good size. My theory is that the bees, however, from such queens are not as long-lived as those of a normal-sized breeder.

The following are desirable points in a breeder: Solid combs of brood, not too early laying in the spring (real early brood-rearing often causes spring dwindling), and a breeder whose bees are reasonably gentle (not as harmless as flies), but just reasonably docile bees which will cap honey white, and fill the boxes out plump, even if the flow is a little light. Then, of course, we want bees that swarm as little as possible.

Some bees, when a honey-flow slackens, stop work in the boxes and crowd the queen into the brood-nest. This kind of bee has never suited me. While I admit it is nature to be looking out for herself, I prefer to have the sections completed at the expense of the brood-nest, even though I have to furnish the bees their winter stores.

Bellevue, O.

THE ADVANTAGES IN FAVOR OF A SHELTERED LOCALITY

BY DAVID ROBERTS

The apiary, when convenient, should be located in a place protected from prevailing winds. My home apiary, for a reason that does not matter here, is in two divisions—one on a southward slope sheltered on the west by tall trees, and on the north by buildings; the other, in a young orchard exposed to the northeast and south.

I consider the season of 1911-'12 a good one in which to make a comparison between these divisions. The winter before, I prepared all colonies alike, using on top of the honey-boards cushions 6 inches thick, of forest leaves. Leaves of the previous year are more crumbly than those of the current, and make fair packing if well compressed and kept dry. The entrance-guards were open $6 \times \frac{1}{4}$, veneered by narrow strips of tin, and nailed to the hives to keep off mice. This was done in November, and I did not see the bees again until early in March, when I noticed that in the open, on account of freer circulation of air, the warmer molecules in close contact with the bees, because of being lighter, gave place to cooler ones, and were carried away from the hive. This was a direct loss of heat, but at a time when the bees could stand it best. As a result, the loss here was more immediate. In the

shelter, more moisture remained in the packing, and in freezing gave back some of its heat. Up to this time it caused no trouble. But when this mass began to thaw it proved worse than worthless, for it called back all of the heat it had given up, and at a time when the bees could least afford it. This condition, however, could have been avoided if attention to the packing had been given before now. As it was, it turned the scale for the time in favor of the exposed division. But, wait a while.

Later on, the sheltered division gave a good account of itself. It proved that "location" is a factor in beekeeping in more senses than one. After all, it is not so much a question how many colonies survive the winter, but, rather, what progress the survivors are making in early spring. It is the bees at the day of harvest that count.

"Bees in the shelter are more prone to swarm." If this assertion were true, and no swarms were desired, this would seem to throw the advantage again in favor of the exposed. But shelter is not conducive to swarming except so far as it favors brood-rearing. Give more time to the exposed colony, and manage it the same otherwise, and it will usually swarm. "Time is money." Especially is this true with the beekeeper, for here lies the difference between a crop of honey and no crop at all.

I say, keep in the shelter and use more packing.

Knox, Ind.

BEES DO NOT LOSE THEIR STINGS WHEN ATTACKING OTHER BEES

BY ELIAS FOX

In thirty years of practical experience with bees, during which time I have seen a good many queens and thousands of workers killed by being stung, I have yet to see the first bee with a sting lodged in it. I have seen thousands of them administering the sting, but never yet saw one lose its sting. They do the work very quickly, and are immediately ready for another or perhaps a dozen more victims. This, it seems to me, is a wise provision of nature, that they may protect their homes against intruders and robbers; for if it were not so, a colony would be nearly defenseless. On the other hand, it is a wise provision of nature that they lose their stings when using them on their keepers and animals, as a warning to be more discreet in their application.

If you think the pain is less severe when the sting is not retained in the flesh, some

time next summer on some hot day while you are bending over a hive let a bee sting you on the back just between the shoulders. You will straighten up so quickly that the sting will be instantaneously withdrawn by the shirt; and if you don't say it is as painful a sting as you ever received I am no judge of pain.

As for drones, I don't know, as I never yet have seen a bee sting one, although I have seen them make all the motions, and act as if they wanted to sting them; yet I think it is very evident that they do sting them—at least I know they can cover the ground in front of the entrance with dead drones over night when the honey-flow is brought to an abrupt end. But I never yet have seen a sting left in one, neither do I believe they lose their stings when killing drones any more than when they kill a worker or queen. If they did it would be a queer provision of a wise Creator, as it is just as essential to the welfare of the colony that they rid themselves of the useless drones after the honey-flow ceases as it is to rear them so carefully before the flow.

The queen's sting is a little different in shape from that of the worker, being slightly curved, and apparently smooth, and free from barbs, similar to that of a yellowjacket or wasp that can sting every time occasion calls for it. I should like to ask if any one has ever been stung by a queen bee.

Out of curiosity I have tried every conceivable manner, both with virgins and old laying queens, to have them sting my hands and arms, and have never yet been able to have that curiosity satisfied; and if any one else has, I am from Missouri.

VEILS.

I was amused to read Arthur C. Miller's article, Dec. 15, p. 808, relative to the various veils. To me there is more real merit in the last two lines than all the rest of it. His pet veil, I see, has the same petticoat that he was making fun of. I have tried the most of them he has described, in a less exaggerated form, and the very best one I have found is the good black net with black net silk and all, with a good rubber cord in each end, one of which fits tightly around a hat of any kind, and the other around the neck. It can be adjusted or removed almost in a second; is always ready, and can be carried in the vest pocket if desired, with no danger of receiving stings through it. I feel just as safe in one of these among the bees as I would in my house with doors and windows screened. I would not give *one* for a dozen of any other kind I have ever seen or read of.

Union Center, Wis., Dec. 27.



The thimbleberry in bloom.—Photo by Wesley Foster.

THE FLOWERS OF THE FOOTHILLS

BY WESLEY FOSTER

The love for and knowledge of the flowers in a way measures the quality of the beekeeper. If he has not an intimate acquaintance with the honey flora in his neighboring fields, hills, and ravines he will be handicapped as a successful beeman.

Let us go for a walk on an early May morning. Before we have gone more than half a mile up the slope toward the foothills we stop and listen to the hum of the bees passing over our heads back and forth from the apiaries in the valley to the hawthorn, chokecherry, and thimbleberry bloom in the foothills.

We find the chokecherries and the hawthorn lining the streams issuing from every ravine and canyon. The hawthorn is so fragrant that the aroma is sickening, and the bees swarm over the shrub-like trees in thousands. It is a merry trade that is kept up; and all the bees have to do is to glide downhill for the matter of a mile or so to get home with their load of hawthorn honey. A hive of bees has filled a super of comb honey from the wild-flower bloom before the 10th of May, though this is uncommon. The great benefit of this early bloom is to build up the colonies in numbers for

the alfalfa and sweet-clover flow in June, July, and August.

The thimbleberry is a beautiful shrub, fit for any park or lawn; and I'll wager that the nurserymen sell a good many of them for that purpose too. They are easily obtained, for there is scarcely a boulder where a thimbleberry-bush is not growing beside it, throwing its branches laden with bloom over the edges of the rock in a very pleasing and artistic way.

The thimbleberry has a large white flower an inch and a half to two inches in diameter. The center is yellow, and the bees wallow around in the pollen, getting all covered with it. The berry, when ripe, is about the size of a red raspberry, and nearly the color, though not so brightly colored. It is not so edible, though when we are out for a picnic we eat them and call them good, probably because they grow wild and are plentiful. They are mostly seeds, with but very little juice to furnish a taste. Perhaps Mr. Burbank or some other plant-wizard could develop something worthy from the plant. A patch of thimbleberries would certainly be a delight to the eye.

But we are out in search of flowers, and here we come to a flower-covered slope of the mountain covered with wild sweet williams. (See cover picture.) This is not a hon-



Daisies from which the bees get pollen.—*Photo by Wesley Foster.*

ey-producing flower, though it is a most fragrant one. A few bees have been seen on the blossoms, and hovering over the fragrant clusters. Probably the sweet perfume attracts the bees, and they fly around till they find out there is little if any thing there for them. Does each bee, when she goes out to work in the fields, have to learn the blossoms that furnish honey? It is reasonable to suppose that the bee has to learn some things, and not depend on instinct for every thing. From the sweetness of the wild sweet-williams I should guess that many a bee has conducted a fruitless search for nectar among the pink and reddish blossoms of this delicate flower till she learned that 'tis not all nectar that smelleth sweet.

As we return from our walk we stroll through an old orchard, and here under one of the trees is a dainty little bed of daisies. The bees are busily at work collecting the pollen. None seem to be getting any nectar, so we decide that this daisy, at least, is not a honey-producer. The variety we do not know; but it is one of the small kinds with a yellow center and white petals. The stems hold the blossoms about six inches above the ground, and they grow close together in little groups as so many flowers do, for the flowers are social in their habits as well as the bees.

In our walk we have seen many flowers of brilliant hue, but with no odor that attracts the bees, and these we admired for their own sake. The flowers the bees love are the ones that appeal to us as beemen; and as we reached home we remarked that alfalfa is making a good start, and sweet clover is becoming evident along the roadsides and ditch-banks.

Boulder, Col.

PROTECTING ROWS OF HIVES IN UTAH

BY M. A. GILL

Although I am hardly a beginner in the bee business, yet I am a beginner in giving better winter protection in this western country, so am sending some pictures showing how I prepare for winter by a plan which proved so successful during last winter.

Fig. 1 shows the front of two rows two hives high, and the backing of forest leaves between (myself in front). The covers have been removed from the bottom rows, and the entrances are contracted to $\frac{3}{8} \times 3$ inches by a lath with a notch in it tacked on the entrance. The covers on the top row have an air-space to allow moisture to escape. Fig. 2 shows the back or north side, show-



FIG. 1.—M. A. Gill's method of protecting a whole row of hives.

MY PERFECT FEEDER

BY JAY SMITH

There is no one phase of beekeeping that I have studied more carefully than the question of feeding and feeders. In my earlier experience I tried various feeders, every kind that seemed to have merit, and found them wanting in one point or another. This lesson, however, I learned: Colonies properly fed always outstrip the others. But it was a big job to feed 100 colonies, as I am engaged in school work, and could not spare the time when the bees needed me most. So I joined that large army of beekeepers who say that if bees have plenty of stores they will do just as well without

ing the tar-felt paper coming down nearly to the ground. The space below, and, in fact, half way up the back side, should be well banked up with earth. Forest leaves, alfalfa straw, or seed chaff, as it is called, I think the best of packing.

While this kind of packing would not do for Wisconsin or Canada, I think it ample for our western States, as it keeps the bees absolutely free from outside moisture, helps to conserve their natural heat, and is entirely impervious to the prevailing winds, which are so detrimental where a continual blast is against the hives. The loss of bees by mixing up is much less than one would suppose during the days when they can fly.

Hyrum, Utah, Dec. 16.

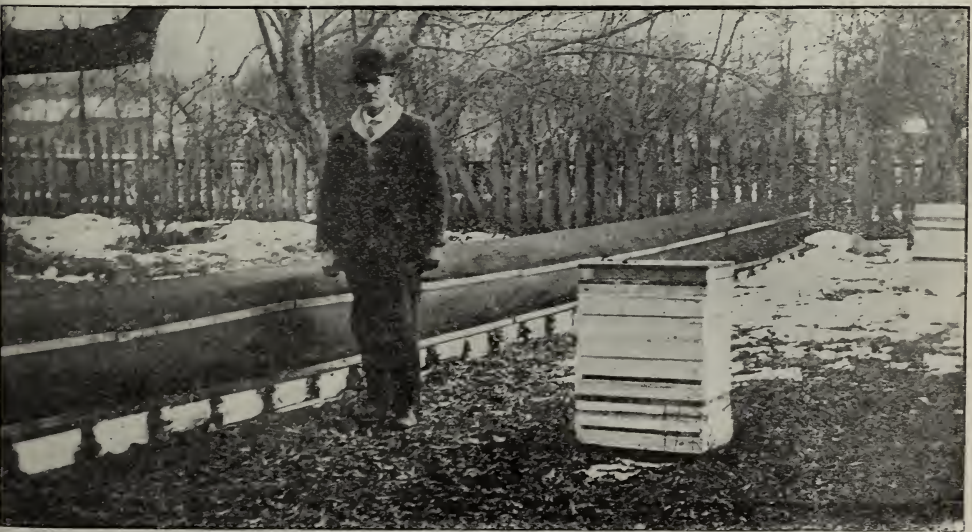


FIG. 2.—The back of the row shown in Fig. 1.



Filling the "Perfect" feeders.

feeding. The four years following ran something like this: Bees in large hives with plenty of stores did well; but about one-half did not have plenty of stores.

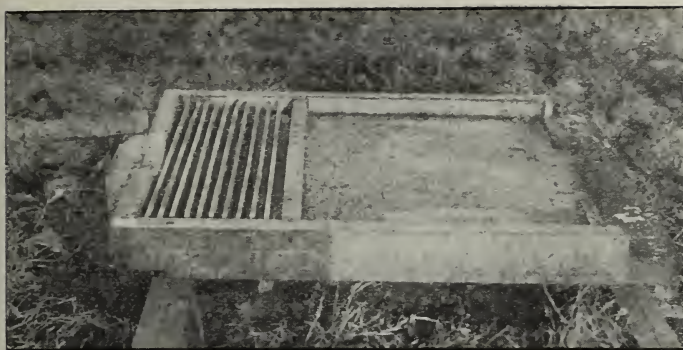
Perhaps one swarmed, and both the swarm and the old colony went into winter quarters a little short of stores. Both failed to respond to the call of the maple blossoms in spring. Perhaps the increase that was made depended upon that "fall flow" that did not come. Perhaps there was a failing queen. Yes, there are many "perhaps" in an apiary of but 100 colonies. So, after toying with the non-feeding method it was plain that, whether I liked feeding or not, I would *have* to feed if I stayed in the bee business.

Of all the feeders on the market, the Alexander was plainly head and shoulders above all others; but for me it had several draw-backs. I wanted a feeder that was always on the hive, so that, if necessary, I could make syrup and feed the whole apiary any time the bees needed it, and do it after or before school. The Alexander feeder is hard to fit to a hive. Where brood-frames are flush with the hive-bottom the frames rest on the feeder, shutting off the passage for bees, and killing them when handling frames, as the cross-piece on the back of

the bottom-board also comes in contact with the brood-frames. Then if not left on the hive the year round, in case the bees need feeding in the spring it takes more time to put the feeders on than I can spare.

After considerable experimenting I hit upon the feeder illustrated. I had the narrow cleats made at a planing-mill, and the material complete cost 5 cts. per hive. It took about 40 minutes' work per hive to make them. To fit the cleats I put ten of them in a vise so they could not split; then with a little drill I made the holes for the nails. They could then be nailed to the bottom-board without splitting.

There is a quarter-inch space between them and at the ends, for the syrup to run around. The lower side of the five cleats next to the door are notched so as to allow the syrup to run through, and the block on the back of the bottom-board is also notched so the syrup will run into the feeder. The syrup also stands in this, so you can see at a glance how much there is in the feeder. If it should become sour for any reason, all you have to do is to raise up the front end of the hive, and it will run out the door. The upper part of the lid is notched out so as not to crush bees if any should crawl out while the syrup is being put in; and there



Jay Smith's "Perfect" feeder in the rear of the bottom-board.

is a bee-space over the feeder so no bees are crushed when frames are handled.

This feeder is *always* ready. I have frequently fed 100 colonies in less than 15 minutes. The feeder holds one quart; so if it is desirable to feed for winter, feed them twice a day for four or five days, and they will be "choke full." I have 100 fitted in this way, and I see nothing lacking; and so I call it the "Perfect" feeder. The bees keep it glued up water-tight, and they like to cluster down among the cleats.

Mr. Aspinwall certainly discovered an important principle in making his hives full of little cleats. I helped hive a swarm in one of his hives, and I was impressed by the way the bees took to the cleats, spreading among them as naturally as though they themselves had made it. In this same manner do they cluster in my Perfect feeder when it is empty.

I do not believe beekeepers as a rule are alive to the importance of stimulative feeding. If you have good vigorous queens, large hives, and if you give a little warm syrup each night for a month before the honey-flow you will get a crop where others will not; and, what is more, your bees will go into winter quarters rich in stores where others will starve. Enough emphasis can not be laid upon the fact that *strong* colonies get the surplus where those not so strong will starve.

Some readers of GLEANINGS may remember that, several years ago, I wrote that the common eight-frame hive is entirely too small for a good queen. It was not uncommon for a poor queen to get more honey than a good one. The good queen filled the brood-nest and swarmed, while the poorer one did not swarm, thereby producing more honey.

For about six years I have used a Dandzenbaker hive and extracting-super for a brood-nest (it is gratifying to me to see the trend is toward a larger hive). This hive is

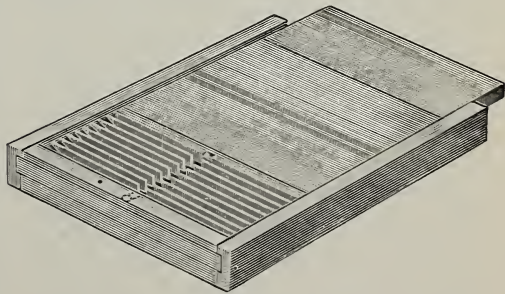
good; but there is valuable space lost in cold weather, as the bees must keep warm a top-bar, a bottom-bar, a bee-space, etc., right in the cluster, while they might better be raising brood there, so I prefer a one-story large hive for extracted honey. The Jumbo hive is none too large. Bees will build up better in the spring, as they work better on a single large comb than on

smaller ones. Doubtless many readers have seen bees stick to one comb, filling it clear out to the ends before jumping to the comb above. There is a great loss of heat in this way where divisible hives are used; as, in order to preserve their heat to the fullest extent, the bees should rear brood in a circle, and this they will do only on large deep brood-frames. Seldom indeed do you see a man who has used large hives go to smaller ones; but it frequently works the other way.

If you are in a poor locality, use the Jumbo hive or one as large; practice stimulative feeding with the Perfect feeder, or one similar, and you will get honey when others lose their bees through starvation.

Vincennes, Ind.

[If we understand our correspondent he would call the Jumbo frame ideal if the empty cells above the brood were filled with syrup before the honey-flow to prevent the bees from storing the first honey there instead of in the supers. There is some danger of having a part of the sugar syrup carried up into the supers if the feeding is continued too late.



The feeder described is similar in principle to the Cary-feeder bottom-board formerly sold by supply dealers, although, in the latter, as is seen in the engraving reproduced herewith, grooves were cut in the rear floor board to make room for the syrup.—ED.]

EXPERIENCES OF A FOUL-BROOD INSPECTOR

Eradicating the Disease Not Difficult if the Beekeepers Co-operate

BY J. E. CRANE

Continued from page 86. Feb. 1.

The more I have seen of foul brood, and especially of the European type, the more fully I am satisfied that, in order to make a success of inspection, the work must be done in the most thorough manner. It is not enough when a case of foul brood is found to clean that up and go on one's way feeling that his whole duty is done. Unless every yard in that section is found and inspected, the work is likely to be of no permanent value; for if there should happen to be a yard just over the hill or across the fields half a mile away, where disease exists, it will soon break out again, and no lasting cure will be effected, and perhaps the cause will be attributed to the method of treating the disease. Of course, an inspector can not find *every* colony of wild bees, so we must watch with great care until we feel sure that every wild colony has gone out of existence. We shall then have the matter in our own hands.

As yet, there are few States that are willing to appropriate a sum large enough to do all the work that should be done as it ought to be done; nor have we enough inspectors to do the work. But I believe it would be better to do thorough work than to extend it over too large a territory and thus spread it so thin that, almost as soon as the inspector is gone, the disease will spring up.

It may often happen that a single yard is all that is affected in one locality, while in others it is scattered over a whole town, and in one case over almost one entire county.

There are some serious problems connected with these diseases. Already some States have forbidden the importation of colonies into their borders unless accompanied by a certificate that each colony is free from disease. This is already causing some trouble. How about the time when various States will prohibit the importation of honey from diseased apiaries? And why should they not do so? Honey is consumed in our larger towns, and the containers are thrown on the dump to scatter disease if there was any in the honey used.

The ignorance of a great many beekeepers enters into the problem of how to get rid of disease. Many have never heard of such a thing. I have visited several beekeepers; and as we have opened hive after



The Spencer boys, who are expert at extracting fish from the lake and honey from the combs.

hive, and have found only webs and cocoons and filth, the moths have received the excretion of the owners, as they have no conception of disease.

BOYS THAT KNOW HOW TO WORK.

It is no easy job to clean up a large yard where foul brood has a strong foothold. In one such yard I found the owner at work. Hearing a noise in his honey-house I went in there and found his two sons, one eleven and the other thirteen, dressed in overalls. One was uncapping, the other turning the extractor. Both were working like old men. I send their photos as worthy of a place in GLEANINGS. They live near a lake, and it seems evident that they can extract fish from its waters as well as honey from the comb.

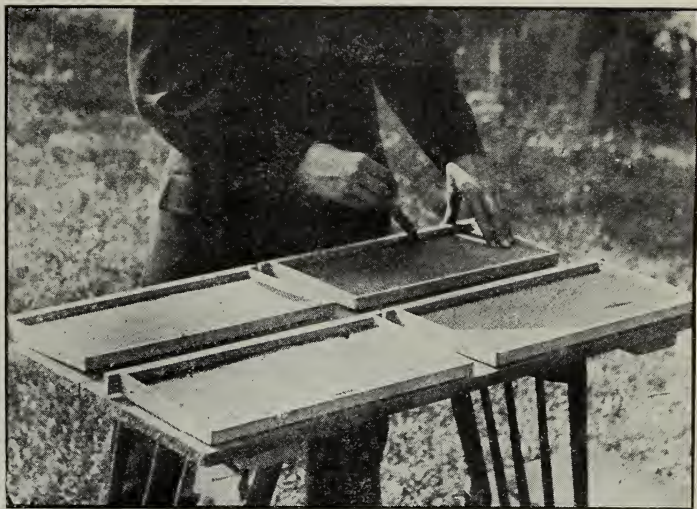
One beekeeper to whom I wrote, asking if he had had any experience with disease among his bees, replied that he had lost about half of them during the winter, and what he had left were quite weak; but he thought that there was no disease among them. I improved my first opportunity to visit him, and found that most of the colonies that remained were more or less diseased. While I talked bees with him, his good wife talked to me on the subject of religion, for she was anxious to know if I was prepared for "the solemn hour of death." I was somewhat embarrassed. I didn't quite know what to say. I thought I was in some measure prepared to live, which seemed to me to be of much greater importance. Of course, she meant well, good soul that she was, and it is an awful thing to think of one's going through life at odds with the Almighty, caring nothing for him when we may live with him on terms of

friendship and filial affection, and even sweet companionship. When our lives are properly adjusted to all above and around us it is a glad and joyous thing to live, and there need be little fear of death.

But the inspector has little time to discuss religion or politics if he would do his duty. His life is a busy one, and he takes an interest in it that few public officials surpass, for the enemy he fights is a personal one, and unless it is overcome and destroyed he knows not how soon it may reach him and greatly injure his own business.

THE UNPLEASANT PART OF THE WORK.

While there are many pleasant things about inspection work, it is by no means all pleasant. There are some long days and long delays waiting for trains. If prepared for work, one must dress rather plainly, for good clothes are almost sure to be ruined. I prefer to go dressed for work so as to accomplish the most in the least time. Al-



One of Mr. Holtermann's students securing full sheets of foundation by means of melted wax in a "bulb" wax-tube.

though last summer was quite dry I was caught in two showers, and was wet to the skin. One day I started to visit a yard that I was told was two miles away, and found it at least four miles, and over a tremendous hill. Just as I reached the place a thunder shower overtook me, and I had to turn around and start back without opening a hive, as I had to take a train that afternoon. A deer, as though to make me ashamed of myself for getting wet, came out of a pasture, and, walking near me, watched me with its curious soft eyes, then ran ahead, crossed the road, and went into the forest on the other side.

After reaching the hotel and station I had time, while waiting for the train, to glance through a butter-factory where they sometimes make 5000 lbs. of butter in a day.

BOTH DISEASES IN ONE HIVE.

I notice there has been some question as to whether American foul brood and European foul brood are ever found in the same hive. I have found but a comparatively small amount of American foul brood; but where I have found both kinds in proximity, I have been quite sure to find some of both kinds in the same hives.

Middlebury, Vermont.

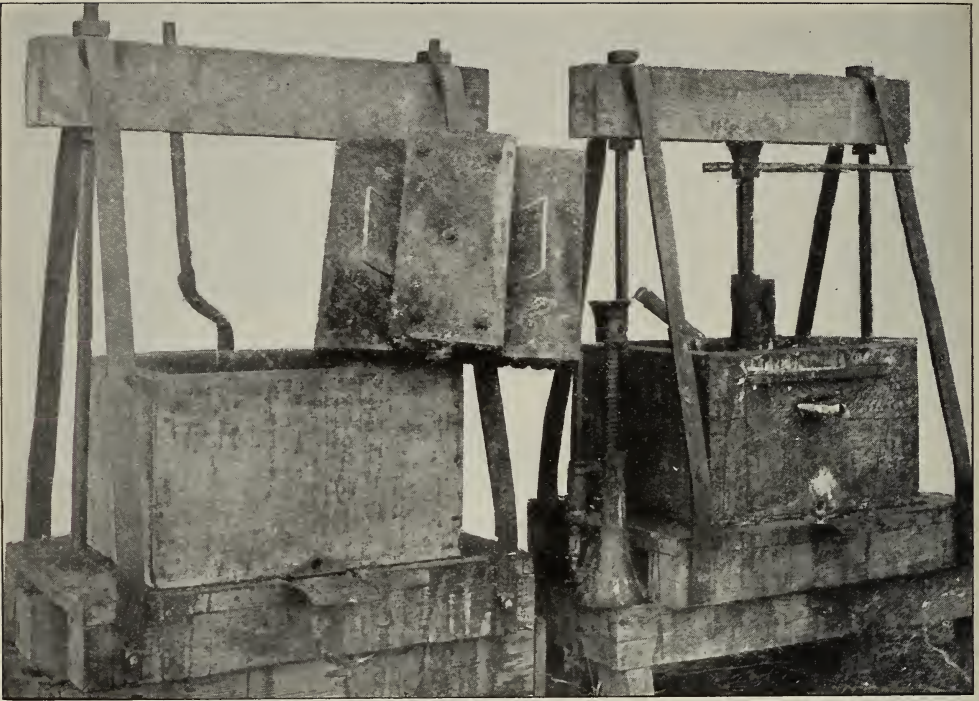
A BULB WAX-TUBE FOR FASTENING BROOD FOUNDATION IN FRAMES

BY R. F. HOLTERMANN

Mr. R. F. Holtermann's four helpers for the season of 1912. Top row: Closson Scott, Newton Falls, Ohio, and C. J. Hawkes, London, England; lower row: D. Glenelg Holtermann, Brantford, Canada, and Felix B. Stump, Parkersburg, West Virginia.



In my opinion it is wasteful to fasten comb foundation in brood-frames by means of a saw-cut in the top-bar. First, it weak-



Atwater's home-made wax-press.

ens the bar. The frame I use has a top-bar $1\frac{1}{8}$ wide by $\frac{5}{8}$ deep, and no saw-cut. There are nearly 10,000 extracting-frames in use, and only once in a very long while, when the wood is cross-grained, can a sagging top-bar be found. This top-bar gives me one row of cells to each frame more than the $\frac{7}{8}$ top-bar. Next, I get the use of one more cell of comb foundation to each sheet, which, in 1000 frames, is quite an item.

The illustration shows our method of putting in brood foundation. Upon a long board are put three smaller boards that just slip inside the Langstroth frame, and are of a thickness that, when the frame is slipped over this smaller board, a sheet of foundation upon this smaller board rests on its upper edge against the center of the top-bar.

A rubber bulb and glass tube is used to take up the melted resinous wax (by guess one-third resin and two-thirds wax), and this tube is run along the top-bar to fasten the foundation as shown in the illustration. The under board is moistened by means of a sponge to keep melted wax on the sheet from sticking.

Brantford, Canada.

VARIOUS METHODS OF TREATING AMERICAN FOUL BROOD

Rendering Wax Economically from Old Combs

BY E. F. ATWATER

The beekeeper who produces extracted honey in a foul-broody locality need not abandon its production for that of comb honey. Some very extensive producers of extracted honey are continually confronted with the disease, largely as a result of the carelessness or ignorance of the small beekeepers and box-hive men near by. One man of my acquaintance even thinks it is easier to control the disease when producing extracted honey than when producing comb honey.

In the line of equipment one needs always an ample supply of extra hives, frames, and foundation, to cope with any emergency; a bee-tight room, a steam-boiler not too small; two powerful wax-presses as shown in the illustration, and a few barrels or galvanized tanks. The bees must be examined in early spring; and any that are badly diseased should be sulphured, and the hives securely closed and stored where no bees can enter. Colonies having but little disease must have the entrances contracted

to $\frac{3}{8} \times \frac{1}{2}$ or smaller; and if but few diseased colonies are found they should be hauled home that evening where they can be treated more safely than at any outyard. A later examination will show if the disease is appearing in other colonies. If one or more foul colonies in your own or near-by yards have been robbed by your bees, a second examination may disclose a few more diseased colonies, or, as has happened twice in our experience, half or all of the yard may be found affected; and then the only recourse is to treat the entire apiary—not so colossal a task as might appear.

At the opening of the flow, every diseased colony must be shaken into a clean hive containing full sheets of foundation. Regardless of whether it is necessary to disinfect the hive, we wish to ask, "Where are we to store the combs better than in the hives from which they came? then, if not rendered until late in the season, how can we make sure that the destruction of all spores is complete in any better way than by boiling the hive after all combs are melted?" Aside from this, we are satisfied that it is not necessary to disinfect the hive. Mr. Trickey, of Nevada, recommends taking several combs away from each diseased colony a few days before shaking. This is not advisable if the flow is at hand, as the bees will fill the empty space with comb. But if not too large a proportion of colonies is affected, and the flow is at hand, so there is no robbing, it is well to take away several combs from each diseased colony, brushing the bees into the hive. To be sure of results, the queen should be caged—preferably in the morning. When evening comes, a new hive of foundation should be set in place of the old one, the lid taken off, and the bees clustered on it, and dumped in front of the new hive. Then the bees should be taken from the remaining three combs, the queen liberated, when the cure will be complete. Taking away part of the combs causes the bees to cluster and to start the secretion of wax, and very greatly reduces the actual work of shaking. This shaking should be started when the bees cease flying for the day, and should be continued until dark.

In our own work we now use and prefer the Chantry method of cure, where the yard can be revisited in from three to five days. In this plan the new hive is filled with frames containing full sheets of foundation, except that the central frame is at least one-fourth to one-half full of empty comb (the poorest combs in the yard may be so used), while on each side of this frame is one frame with a starter only. Three to five

days after shaking, this central comb is carefully removed; and while the bees are working freely, the bees are carefully and quickly brushed in front of the hive or into it, and another frame with a full sheet of foundation is added. By the Chantry plan, any diseased honey not at once used for wax-working will be stored in the bit of old comb. The empty space on each side favors compact clustering and free wax-secretion, and both comb and space favor that content which tends to prevent swarming out and drifting to neighboring hives. (At the recent convention of the Southern Idaho and Eastern Oregon Beekeepers' Association, Mr. G. J. Yoder strongly advocated quickly *driving* the bees from a foul hive into the new hive, doing the work when the bees are gathering heavily, say between 11 A. M. and 4 P. M., as the driven swarm is far less likely to "drift" or to swarm out than if *shaken*, with the added advantage that night work is avoided.) Whatever the actual method of removing the diseased combs, all such combs, together with all combs used for three to five days on the Chantry plan, are now stored where no bees can reach them. The apiary may now be supered, after putting an excluder on each colony. When it is time to extract, if at all fearful of reinfection from yards near by, we remove the supers and the excluder, lift a comb or two, when, if no disease is apparent, we remove the supers to the shop for extracting. If a few colonies are found with a little disease, and the season is too far advanced to be worth the trouble of curing such colonies, we see that the bees have as much room as they can fill, above the excluder. Then as the flow wanes, they should be sulphured, and all the combs stored where they will be secure from robbers.

If it is possible to spare the time, when the last flow is waning every colony should be inspected. If one waits until the flow is over, robbers may be so bad that inspection of a large yard will be impossible unless, perhaps, the feeding of a large amount of very thin syrup might keep the bees so busy as to allow them to be handled the same as during a flow.

One of the greatest aids is to get out and clean up neighboring colonies, or to get the inspector to do so. If one has the time, and cares to risk the mere presence of the disease in the yard, he can save every diseased colony that has enough bees to winter. The plan consists in simply contracting the entrance and fitting an Alexander feeder under the hive, with extra care to have every thing tight. When all brood has hatched,

some time late in the fall give the bees a feeder full of warm syrup at 4 or 5 P. M., and in an hour give them another. Then when they have stopped flying, brush them into a new hive with as many solid combs of sealed honey as they can cover. By filling with warm syrup the bees to be cured, we effectually prevent any chance of failing to cure the disease by the above method, though we seldom bother to cure any cases found late in the season, as bees are easy to raise here, and we prefer to remove all chances of infection earlier in the season.

When the season is over, one should be ready to melt the combs taken from diseased colonies. Have your steam-boiler standing outside the shop; run steam inside through a half-inch pipe, into both wax-presses, and into several barrels or tanks. Melt the combs either by direct steam or by boiling, as preferred; then when there is a lot of hot melted comb, fill a press, put on the pressure, begin to melt more combs, occasionally turning down the jack-screw of the first press, then fill the second press and repeat. About the only limit to the amount that one can render is the limit of the steam supply. It is not wise to get too small a boiler. With our powerful presses we get the best results by pressing the first time, just as the melted comb comes from the boilers, taking care to dip up plenty of water with the comb, but having a little steam constantly running into the press. After the wax ceases to run in a decided stream, we loosen up the screw, fill the press with boiling water, turn on more steam, which shakes up the slumgum, causing it to take up more water; again apply the pressure, finally drawing off all the wax and water into a deep Aikin wax-separator, which runs the wax into one can and the water into another, where it may be used again.

Any combs, either from the brood-nest or super, that show no disease may be extracted if the honey is not candied. The extractor should be a small one, used for no other purpose. Combs of candied honey (provided the old brood-combs are not full of cocoons) may be run through the Powers capping-melter. Such honey may be shipped in winter, to be used for manufacturing purposes if one has a market for such goods.

If diseased honey is to be saved for feed (and the bee business is not such a bonanza that it is not necessary to save every such by-product), we now have a new method of saving all of it. When rendering, we cut out any diseased parts of combs containing some honey; pile these frames and combs of

honey in the capping-melter; cover with doubled canvas, and steam. The honey, somewhat thinned by the steam, runs out at a great rate, is separated from the wax, and then canned. This is somewhat similar to the method recently described by Mr. Wesley Foster, p. 473, Aug. 1, 1912, but by using a big steam supply from a regular boiler the work is more rapid. If we have much honey to save from diseased combs another year, we expect to build a large cupboard of galvanized iron in which shelves of combs, standing, may be shoved, so as to melt a large quantity at once.

In the footnote to Mr. Foster's article mentioned above, the editor intimated that such a process sterilizes the honey; but our tests compel us to sound a warning, as we find that a temperature of only 180 degrees Fahr. is reached by the honey so steam-melted. Of course, a saving of fuel would result if the honey so melted were at once boiled over a fire. Before feeding such honey we dilute it until it is about one-fourth water, then boil it over gasoline-stoves (so as to control the temperature, thus avoiding boiling over and the danger of fire). For this purpose we use wash-boilers with a cover on each. We do not put on the cover at once, as honey which is being heated has some queer notions. When it first begins to boil, one must watch closely, turning down the blaze as necessary, and stirring. Then, as a rule, after it has boiled for perhaps five minutes, the tendency to boil over is past, and the cover may be put on the boiler. The cover should have a one-fourth-inch hole in it, at the top, where the steam may escape. Do not go away and leave the boiling honey, as some lots will again boil over unless watched and stirred, while other lots will boil furiously without danger. We boil the honey for fifteen minutes at least; then a few days later, usually when the honey is needed for feed, we again boil it for about five minutes.

If the directions which have been given are followed, using a cover on each boiler (an idea that we obtained from Mr. R. D. Bradshaw, of Payette, Ida.), the feed is so safe that I have felt no anxiety in using it freely, in outside feeders, in yards of as many as 275 colonies.

When through rendering, the floor and walls, as well as the tools and clothes, should be freely sprayed with a very strong carbolic solution, so as to avoid any chance of the bees picking up any thing that might lead to the disease; for, even if the carbolic solution should fail to kill all germs and spores, the strong odor is so objectionable as to prevent bees from working on any

thing sprayed with it. The disease of which I have written is the real so-called American foul brood, with which I have had to contend most of the time, in one or more yards, for more than a dozen years, twice having to melt the combs from an entire yard.

Meridian, Idaho.

BEEKEEPING IN THE ISLAND OF CYPRUS

The Progress in Apiculture as Seen by a Veteran Beekeeper

BY M. G. DERVISHIAN

I am glad to say that, about twenty-nine year ago, when I started beekeeping at the town of Larnaca, on the island of Cyprus, I was a reader of GLEANINGS for a few years. Then I received a copy of the A B C of Bee Culture. I sincerely confess that, during the period of twenty-three years, when I was without GLEANINGS, I was a loser. Two years ago I subscribed again for GLEANINGS. I take great pleasure in mentioning that the improvements in bee culture during the last twenty years appear to me to be wonderfully great. These improvements are, no doubt, attained to a great extent through the instrumentality of the beekeeping journals in which the experiences of many prominent beekeepers are concentrated and discussed for the benefit of all the readers.

Naturally, in the past twenty-three years necessity and close observation have taught me a few things which I now have the pleasure to put before my fellow beekeepers.

COVERING THE TOPS OF FRAMES.

Many years ago I used to cover the tops of the frames with oilcloth or with a thick cotton cloth. I discarded the oilcloth because it kept the inside of the hive damp. The use of the cotton cloth was becoming very expensive because the bees were always gnawing and piercing the cloth; and besides this they wasted a great deal of their energy in propolizing it. Each time, when the cloth became worthless on account of many holes in it, it was thrown away, together with the propolis, as this could not be scraped off and returned to the bees. I therefore discarded the use of the cotton cloth also, and commenced covering the top of the frames with a thin wooden lid in three pieces. At first I used to nail wooden bars half an inch wide by one-fourth inch thick around this lid in such a way as to provide a bee-space between the tops of the frames and the inner surface of the lid. Seeing that, in so doing, the bees were building bridges and wasting wax and pro-

polis I discarded this kind of lid and replaced it with wooden bars about three-eighths inch thick and two and three-quarters inch wide, each bar to cover exactly the tops of two frames from end to end. These bars are put flat on the tops of the frames without leaving any bee-space. I have twelve frames in each hive, and I use six such wooden covers for every hive. This arrangement gives me great facility of movement, as I can remove as many as I like of these six covers; and I scrape off the small amount of propolis, which I return to the bees. For re-covering the tops of the frames I slide the scraped faces of these bars (covers) on the frames longitudinally, commencing from the ends of the frames. In this way not a bee remains between the tops of the frames and the cover; for when sliding the bees (if any) are pushed away. I found this last method of covering bees to be the most economical and the safest. The use of smoke for driving bees down from the tops of the frames is obviated. I find that it is desirable to make use of smoke as seldom as possible.

MY WAY OF MANUFACTURING COMB FOUNDATION.

Within twenty-nine years I have received three comb-foundation machines. According to my idea I have made a step forward in the manufacture of foundation. I make use of sheet glass (strips of ordinary window pane) dippers instead of sandpapered wooden dippers. So I save the trouble of sandpapering the wood, and I get better and more even sheets. Another advantage of the glass dippers is that glass cools quickly. In case, through a mistake, the wax sticks to the glass, I immediately clean it with a very small piece of linen soaked in a solution of carbonate of soda. For melting the wax I make use of a tall enameled vessel. I put into this vessel about three inches of water, and over this water I put the wax and set it on a petroleum-stove. When the wax has melted I reduce the flame of the stove to such an extent as to keep the wax in liquid state, but below the boiling-point. All the impurities, if any, settle down into the water. Then I wet the glasses and dip them one by one into the liquid wax. I repeat this dipping three or four times just to get the sheets of wax sufficiently thick for passing them through the rollers of the machine. Before putting the wax sheets through the rollers I dip them in water, warmed to about 90 F., until the sheets become sufficiently soft. I find it is essential that the rollers should be cool and the wax just warm—i. e., soft enough to get the desired even and thin comb foundation.

Of course I starch the rollers before using. By using these glass dippers, and following the printed instructions sent to me with my comb-foundation machines, I have been successful in manufacturing the thinnest possible and finest comb foundation.

Nicosia, Island of Cyprus, Dec. 19.

To be continued.

[We are glad that our correspondent, after having served for many years as a government official, has now the leisure to return to bees and beekeeping. He is now training his six sons in apiculture, and also in sericulture (the growing of silkworms). The young men are now contemplating starting a series of out-apiaries, and they are expecting to equip them with American hives and fixtures. They already occupy an important position in the beekeeping interests of the island of Cyprus, and are the only rearers and exporters of Cyprian queens there.—Ed.]

THE QUESTION OF ALFALFA HONEY IN THE EAST

BY WESLEY FOSTER

Mr. Crane has drawn the inference that it would be better if all Western honey were marketed in the extracted form, and that alfalfa honey granulates more quickly than Eastern honey—April 15, p. 224. As to the first proposition, I will say that the time is a long way off when all Western honey will be extracted. The past season, extracted-honey production was overdone in the West, and comb-honey production fell short of the demand. There is one fact regarding Western honey that all readers should thoroughly understand. Pure alfalfa comb honey will scarcely granulate at all. The case of comb honey that was awarded first place at the exhibit of the National convention in Denver a few years ago was two years old, and showed no signs of granulation. I think that Dr. Miller was one of the judges. There are many carloads of pure alfalfa honey produced in Idaho, Montana, Wyoming, Utah, Colorado, Nevada, Arizona, and New Mexico; and if in the comb this honey will show hardly any signs of granulation within a year. But we also produce a large amount of honey from sweet clover, alfalfa, clover, and wild flowers mixed. This honey will granulate sooner, so should be on the market early, and should be consumed before the holidays. I will make this point of early marketing of this comb honey as strong as possible.

Alfalfa extracted honey will granulate readily into a hard white "cheese," and it would doubtless pay to develop a market for this article; but the educational campaign necessary will cost money.

Western honey has developed a market for itself. I should like to have the opinion of the largest buyers of Western honey as to why it has stolen a place in Eastern markets, commanding 25 cents a pound. If Western honey can capture such a market it must have pretty good quality back of it. Perhaps the fact that Western honey can be secured by the carload, and the dealer is able to supply a more uniform grade and style of package throughout the year may have some effect in giving it the preference.

There is one thing that I noticed in the Chicago market, and that is that Western honey is produced in the standard section almost altogether, and marketed in single and double tier cases, while I saw Eastern and Middle Western honey in four or five different sizes of sections, and as many different kinds of shipping-cases, with no standard grading rules. I do not think that the markets can be injured by having honey supplied at all times of the year, and that is what the West has partly helped to do. We are not perfect here in the West. We have the problem of poor grading, and some of it dishonest in its methods, but the West is not alone in this latter particular.

As long as we are selling our honey under the competitive system there will be more or less clashing; but there is room for all who can produce the article that the market demands. And I do not believe that it will be so difficult to secure national grading rules. We shall then have honey-grading schools conducted at all of the conventions and bee meetings, and the unity of the methods and interpretation of the rules will correspond all over the country.

Boulder, Colo.

Oregon Fruit-men Planning to Keep Bees for Pollination of Fruit-trees

There is a good prospect for a good crop of fruit here. If favorable weather conditions continue the colonies will be strong for next spring.

Most of our orchard men are going to install a few colonies of bees in their orchards in order to pollinize the fruit. They are just beginning to find out that they can not raise fruit without the honeybee. I wish all the rest of the farmers would do the same throughout the whole country. Then we could call this the land of honey and plenty of money.

The Dalles, Oregon.

JOHN PASHEK.

Heads of Grain from Different Fields

Tendency to Revert Back to Black in Color; the Origin of Foul Brood

1. Is not the honeybee of America a dark bee? and have not all other yellow imported queens a tendency to produce bees that become dark after several generations, irrespective of meeting with dark drones? I mean, is it not a continental tendency, as the black man is to Africa and the yellow to Asia?

2. Is not foul brood caused by *condition* as well as by *contagion*, the same as diphtheria in the human? A queen run to her utmost limit in egg-laying naturally becomes low in vitality. Her brood fails to develop—dies, and becomes foul. The same holds good in poultry run at high pressure, and handled under artificial conditions.

Slate River, Ont., Can., Jan. 8. J. M. MUNRO.

[1. The native bees found in this country in the early days were black—very similar to and perhaps identical with the German black bees, but probably somewhat different from the black bees of Great Britain. At the present time Italians predominate largely in many localities, especially where bees are kept in modern hives. But there are certain localities where black bees are the only race to be found.

The extra-yellow Italians that have been bred for color have a tendency to revert back to the original type. In southern Italy the bees are yellower than those in the northern part of that country. If the original type was leather-colored, then the yellow strain will show a tendency to revert to the leather color—that is, of course, supposing no effort is made to breed from yellow drones and light-colored queens. But in many localities Italians will cross with the native black bees. In such cases we have a hybrid of two races. If the predominant bee in any locality is a native black bee, then any other race on the yellow order introduced would, in a short time, become so much crossed with the black strain that we would have nothing but black bees. We do not believe that the habitat has any thing to do with the color of bees; but the blacks are more persistent—that is to say, they have greater power to force their way into new territory than the Italians have.

2. Strictly speaking, foul brood or any germinal disease is not caused by condition; but a condition may be such that a disease finds a more ready lodgment if the germs of the disease are *already present*. Speaking more specifically, no amount of rotten brood caused by chilling or overheating will develop into foul brood. But rotten matter, or bees in a weakened condition, if they do not properly take care of the brood, might help the propagation of disease already present in the form of spores when a healthy colony or well-fed brood would throw it off. In the human family a healthy individual will resist disease much better than one who is all "run down," and the same general rule applies to bees. Let it be clearly understood that corn will not grow where no corn has been planted; neither can disease develop, no matter how favorable the surrounding conditions, when no disease germs are present. This fact has been conclusively proven.—Ed.]

Can Increase and a Honey Crop Both be Secured at the Same Time?

I have been a subscriber to GLEANINGS for a number of years, and have learned many things from it that have been of value to me in beekeeping. I have nearly all of the books you publish on beekeeping, but can not find exactly what I want on increase. My conditions are as follows: I have one hundred colonies in two yards. Practically my whole surplus honey is from clover and basswood. I run my bees on the Alexander plan for honey, and have no swarming to speak of. Our honey, coming as early

as it does, I do not care to increase by the Alexander plan. I wish to double my number without decreasing my honey crop. I have plenty of hives and foundation. Would I succeed if, instead of placing the brood above the excluder, I would take one frame of brood with the queen, one frame of honey, and one empty comb, and start a nucleus from each strong colony, giving each old stand a young queen in two or three days?

Spring Green, Wis., Jan. 7. G. H. PECK.

[It is practically impossible to double your number of colonies without decreasing your honey crop; that is to say, you can not double the colonies and produce a honey crop both at the same time. You can make increase, but at the expense of your crop. You can, however, do this: Run your colonies in the regular way; get them as strong as possible, produce the crop, and then, after the crop has been secured, divide and build up the nuclei by feeding. The plan you propose would be perfectly feasible. Of course, you need to bear in mind that, after the honey-flow, and the crop has been secured, the robbers are inclined to cause more or less trouble; and in the feeding you will need to exercise more than ordinary precaution to prevent robbing.—Ed.]

Warm Weather Causing Much Brood-rearing in the South

In the fall I fed my bees about 15 pounds of sugar syrup, made a little less than three parts of sugar and one of water. They had the hives practically full of good sealed stores the last of November; but every warm spell I could notice that they were raising young bees, from the fact that they would bring out some dead ones after we had had a cold snap, and this I suppose to be chilled brood.

I wrapped my hives well with old newspapers, and then covered them on the outside with three-ply roofing paper. On the 6th of January I noticed the bees bringing in some pollen; and every warm day that we have I notice that this pollen increases considerably—that is, the bees seem to bring it in more freely. On Sunday, Jan. 19, I noticed that they were coming in with quantities of pollen, and working as in summer time. I could not imagine where this came from, so I hitched up my horse and drove to the country, and found that it was coming from the alder, of which we have an abundance.

Now, what I want to know is, will not this pollen coming in start them to raising brood very freely during this warm weather? and when they consume what stores they have in rearing the brood, if we have cold weather in February (which we generally do) are they not liable to starve? I can feed the bees during warm days; but I do not know whether to feed them with thin or thick syrup at this time of the year. Our weather here is very warm. Some days the thermometer stands at 75, and we have had but very little freezing weather. Our hives are running over with bees, and we do not want to lose them.

Kinston, N. C., Jan. 21.

J. W. BLACK.

[During a warm open winter such as we have been having, bees in the South will rear a considerable amount of brood provided they can secure natural pollen, and they will do a good deal of brood-rearing, oftentimes, without natural pollen coming in, if there is pollen in the hives, which is generally the case. As you surmise, there is danger in such cases that the bees will use up their stores to such a point that starvation will follow. If you fed your bees 15 pounds of thick sugar syrup, as explained, so that the hives were practically full the last of November, we feel quite certain that there will be enough to carry them through until spring.

We advise the examination of a few colonies; then, after making the examination, "heft" the hives so as to make a note of its weight. By thus "hefting" the other colonies of the yard you will be able to form an idea of their relative amount of stores. If there is danger of your having cold weather in February we would advise, in case it is necessary to feed, a thick syrup about the same as you fed them last fall. If it should be too cold to feed, give them candy, made as directed in the A B C and X Y Z of Bee Culture; but in the kind of weather you have been having, there will be no trouble about feeding a sugar syrup.—Ed.]

The Warm Winter Weather Causing Bees to Fly and Rear Brood

Is it dangerous to permit the bees to fly at this time of the year? I presume not, from what I have gathered by reading; and, in fact, it is practically impossible to keep them in the hive, inasmuch as we have had spring weather since Christmas. The three first weeks of January have been like April here in Washington. Yesterday, the 19th, I noticed a number of my bees having pollen on their legs. Where they secured it is a mystery to me; but yet it is a fact that they were gathering, to a small degree. I believe this is a remarkable record for January. Last year we had "bitter" weather at this time of the year; in fact, all of January and part of February was such weather as to cause the thermometer to register around zero, or from 10 to 15 degrees above, for nearly two weeks or more.

Is there any thing you can suggest as to ascertaining whether the stores are sufficient to carry the bees through to spring? The hives are all closed up, packed, and the packing covered with oilcloth, and hence I can not open them; but I thought you might have a suggestion to make as to how to ascertain whether the stores are sufficient, or how to save any weak colonies should their stores be low. Perhaps you can advise as to whether there is a method of feeding bees at this time of the year; but inasmuch as the bees are coming in and going out as if they were in a healthy condition, I presume there is nothing to do but let matters rest as they are with my colonies until spring.

Washington, D. C., Jan. 20. E. E. VROOMAN.

[You can not prevent bees from flying when the weather is suitable; in fact, it is better that they should. We refer you to the reply to J. W. Black, above, for Mr. Black is located in about the same kind of climate.—Ed.]

Unlawful to Ship Diseased Bees from One Locality to Another

Please inform me regarding the necessity of having bees inspected prior to moving them from one State to another. I wish to move mine next spring before the honey-flow will warrant inspection without robbing. Do you mean to say in the A B C and X Y Z of Bee Culture that no bees can be shipped with safety while there is the least bit of foul brood present? It seems to me that, if the few colonies were cleaned up, they would be permitted.

Idaho.

SUBSCRIBER.

[Under your foul-brood law you would not be permitted to ship bees from one locality to another in your State until they had been inspected by the State foul-brood inspector or his duly authorized agent. They could easily be inspected before the honey-flow; but perhaps you mean you desire to have them moved before warm weather sets in, so that the brood of the colonies could be examined to see whether it contained any diseased matter. There probably would be no brood at that time.

It is not safe nor wise to try to ship colonies of bees that contain infection, be it ever so small an

amount. If a single cell shows diseased matter we would not ship the colony, because a single cell may develop into a rotten condition throughout the entire colony.—Ed.]

A Good Record in Favor of the Danzenbaker Section as a Globe Trotter

Early in September I was commissioned by the Provincial Department of Agriculture to prepare an exhibit of honey, etc., for the agricultural fairs of Victoria, Vancouver Island, and New Westminster on the mainland of British Columbia and for the dry-farming congress, Lethbridge, Alberta.

The comb honey was in 4 x 5 x 1½ Danzenbaker sections; and I think, taking into consideration the miles traveled (about 1800), and that the combs were handled from wharf to railroad depots, from depots to wagons something like thirty times, and yet arrived back to Victoria without a section, comb, or single cell being damaged, is a wonderful record.

The sections were packed 16 in a glass-fronted crate, 3½ inches wide, about ¼ inch play at sides and ends, one layer of sheet cotton batting on bottom and top of sections, and lid nailed on. The crates were packed four in a used candy-box, two deep and two wide, glass fronts toward each other, with sheet of corrugated paper between. On the bottom of the box were two inches of excelsior. Between the two tiers of crates was one inch of excelsior, and two inches of the same packing on top of all. Between the sides and ends of the crates and the sides of the box were three inches of excelsior, all packed as solid as hands could pack it. There was much doubt as to results when the final trip home of 800 miles by freight, which took 21 days on account of an accident on rail, was started; but every thing arrived in good condition—no shake in the big box, not a glass or comb broken, nor a cell of honey leaking. The sections were all selected for exhibition purposes. The combs were well filled, and attached right to the edge of the sections. These were displayed in glass-covered trays holding 24 sections, presenting one solid slab of snow-white honey 24 x 30 inches, and were the admiration of all who saw them.

Now for the secret of success. The combs were one solid mass, with no empty spaces as with bee-way sections, no shake in crate, excelsior packed firm; just sufficient spring to receive concussion of rough handling, but resiliency to resume its former position before the shock.

TABLE OF DISTANCES COVERED.

Comb honey moved from ranch to railroad station at Shanrigan Lake by row boat . . .	1 mile
Shanrigan Lake to Victoria by rail	28 "
Depot to house by team	1 "
House to Victoria exhibition by team	3 "
Victoria exhibition to Canadian Pacific railway wharf by team	3 "
Boat to Vancouver	75 "
Vancouver wharf to depot by team	1½ "
Vancouver to New Westminster by rail . . .	12 "
From depot to fairgrounds by team	1½ "
From New Westminster to Lethbridge by rail	790 "
From depot to fairground by team	1 "
From fairgrounds to depot by team	1 "
From Lethbridge to Vancouver by rail . . .	800 "
Vancouver to Victoria by boat	75 "
Wharf to house, by express	1 "

Total 1794 miles

About 30 handlings took place.

About 100 jars of extracted honey were packed in excelsior; not one broke.

It is very different with straw, so frequently used in comb-honey packing. Straw, when once flattened, remains so to a certain extent, and leaves too much

space for the comb honey to shake about. In moving bees from place to place in wagons, I always use hay, as it is much more resilient than straw.

E. F. ROBINSON.

Victoria, British Columbia, Canada, Nov. 27.

Would Albuminized Sugar as Feed and Substitute for Pollen be Practical?

In reading the article, "The Physiological Effect of Feeding Sugar," p. 817, Dec. 15, the thought came to me, "Why not feed albumen?" If pollen, which is so rich in albumen, is so essential to brood-rearing, why not feed albumen in a concentrated form? A substitute for pollen would be hard to find; but the white of an egg is rich in albumen. To the beaten whites of eggs add pulverized sugar until it forms a soft mass about the consistency of dough, and feed as you would hard candy or fondant, or add the beaten egg to sugar syrup previously cooled so as not to cook the egg, and feed in any of the various feeders. Feed this albuminized sugar or syrup in early spring to prevent spring dwindling, and to encourage brood-rearing.

Now I am only a novice at beekeeping, chickens being my hobby. The laying hen must be supplied with an abundance of protein and other foods essential to egg production. According to Dr. U. Kramer, pollen (albumen) is essential to brood-rearing, and the bees' welfare in general.

I have never tried this albuminized sugar or syrup feed. It is only a thought which came to me while reading Dr. Kramer's article. Do you know of its being tried? Do you think it practical?

Kansas City, Mo.

MRS. H. MILLARD.

[Bees can usually obtain natural pollen as soon as the weather is safe for extensive brood-rearing; but under conditions where the natural pollen is too scarce we think the feeding of some such substitute as rye meal out of doors would be much cheaper and more satisfactory than the expensive white of eggs, even if the latter would supply all the elements needed—a supposition which we doubt.—Ed.]

How Much has Location to do with Success in Working Bees for Honey?

Two years ago I sold some of my land in South Carolina, and in casting about for an investment I decided to move to Georgia, within eight miles of Augusta, where I could engage in the trucking business and also work my bees for honey. I practically had to give up queen-breeding on account of not having help at that time. I found the best roads around and near Augusta that I had ever seen. The land for six miles out is a black loam; but after passing these six miles we come to high dry sandy soil, with a scrawny growth of oak and long-leaf pine, identical with many lands in Florida. We finally decided to locate on a hill about a mile long, where the atmosphere is dry and pure.

When I moved I brought 20 or 25 colonies of my best strain of Italian bees, and some of these were taken off the wagon and placed directly on the ground without even a bottom-board. The bees have not been harmed by ants or other insects. I have never seen ants disturb a colony, notwithstanding many are in this soil. I thought from all appearances the territory around would be good for bees; but I have been here now two seasons—one a very dry year, and the other wet and seasonable throughout the year, and a large portion of the time too wet. Although there were many ideal days, both in spring and summer, I have secured but little honey, even extracted, for I do not work for comb honey. The cotton failed to produce honey here this season, and also the asters and goldenrod; and yet there were times when I thought conditions were ideal.

I can not account for this, except by climatic influences. There are swamps and the Savannah River within five or six miles. I write to give my fellow readers this experience, and to show that there must be about as much in location as any thing else; and it may be that some can account for the conditions here by some other theory.

I note that the shipping of bees by the pound from the South is recommended in order to build up weak colonies north. This is practical and profitable. Several years ago, when I commenced shipping bees and mailing queens, we shipped a good many bees by the pound; but for some reason it was discontinued, and the nucleus system took its place. Last year I shipped a few cages of bees to Canada with perfect success, and would have shipped a good many to the party; but in the mean time they sold out their bees and ordered shipments discontinued. The cages manufactured are well adapted to this purpose. While I did not get much honey this year, my bees are in fine condition for the coming spring.

Augusta, Ga., Dec. 31.

J. D. FOOSHE.

[Mr. J. D. Fooshe is one of the most experienced queen-breeders in the country. Our older readers will recognize him as the man who was able to raise such fine stock in the days gone by. In the last few years he has somewhat dropped out of sight, and the letter above explains why. If there is any man who can make a success of shipping bees in pound lots, Mr. Fooshe would be the man to do it.—Ed.]

"Bulk Comb Honey" or "Chunk Honey"? which is the More Distinctive Expression?

I note that your Texas correspondent is very anxious that the term "chunk honey" be dropped, and "bulk comb honey" be substituted. "Bulk comb honey" is descriptive, but not more so than the less cumbersome term "chunk honey," and is misleading when applied to a mass of chunk honey with a quantity of extracted honey to fill up the spaces. His plea that the product originated in Texas would indicate a greater antiquity for the honey industry in that State than most of us were aware of.

Before we heard much about Texas as bee territory I produced and sold considerable quantities of chunk honey in Iowa; and about 1856, when I was not more than four years of age, I ate chunk honey in Illinois, and I distinctly remember the flavor of sulphur, which proclaimed the process by which it was commonly obtained in those days, viz., by smoking the bees to death, "taking up a hive" and cutting out the chunks.

But the product is evidently older yet, for it must have been chunk honey which Samson took from the carcass of the lion, and that, if I remember correctly, was several years before Texas was annexed to the United States.

BURDETT HASSETT.

Alamogordo, New Mexico, Nov. 21.

[There is considerable truth in what our correspondent says, and ordinarily we prefer the shorter term; yet, on the other hand, it is true, we think, that there should be a distinction made between the modern "comb honey in bulk" and the old-fashioned "chunk honey" obtained by sulphuring the bees. We ourselves are inclined to agree with Mr. Scholl, therefore, as we feel that bulk comb honey is really the more distinctive and dignified term.—Ed.]

Why Not Send Pound Packages of Bees by Parcel Post?

Referring to the editorial, Dec. 15, p. 787, regarding pound packages of bees from the South to the North, I wish to say that it is the greatest plan ever promulgated. One of the best things about this business is that the packages of bees are young ones, and, consequently, will live longer than the wintered bees,

and they will be worth as much to the northern man as twice the number of wintered bees. Yes, it is a success. I have sent hundreds. I am able to guarantee safe arrival and satisfaction on packages when a queen is with them. They do not always go through as safely when they have no queen. I have 550 queen-mating boxes, and 500 full colonies to produce bees and honey, and an excellent southern location. I can send out 500 or more packages of bees a month after April 15. Why can't they be sent by parcel post?

Fitzpatrick, Ala., Jan. 3. W. D. ACHORD.

[We have looked up the parcel-post ruling, and it seems to us very clear that bees can not be sent in regular pound and half-pound packages. A modification of the ruling may be made for us later. However, ruling or no ruling, we believe it would be unwise for the average beekeeper to undertake to ship bees by parcel post. This new old method needs to be tested a little more before it can be considered safe to undertake it. About thirty-five years ago an ignoramus undertook to send about $\frac{1}{2}$ lb. of bees in a paper box by mail. They got loose, of course, in the mail-car, and stung the employees. The result was a ruling that barred even queen-bees with their attendants from the mails. It was a matter of a year or two, coupled with a good deal of hard work on the part of Prof. A. J. Cook, now of California, and others before the ruling was rescinded. See GLEANINGS, page 106, for March, 1880. It would be folly to repeat this experience, and for that reason we urge the importance of waiting until we have a combless cage perfected. Then we can go to the Postoffice Department and show what we can do, and probably secure a ruling in our favor.—ED.]

Double Wire Cloth for Better Ventilation in Combless Bee-package

I have made only one trial shipment of a package of bees without comb, sending a pound of bees confined to the package 46 hours with only three dead bees at the end of that time. I made the package $4 \times 6 \times 8$, of $\frac{3}{8}$ -inch square stuff with one fence-like piece through the center for the bees to cluster on. After making the frames of the $\frac{3}{8}$ stuff, 4×8 , I covered both sides with wire cloth. This gives a space between the wire cloth of $\frac{7}{8}$ inch for air, if there should be other packages piled on or over the bees. I then nailed on the bottom and two strips $\frac{3}{8} \times \frac{7}{8}$ to form the ends, which I also covered on both sides with wire cloth. The candy cage is fastened on the floor. Then I cut a piece of heavy felt about 6×6 inches. I waxed the floor well where I placed the felt. This felt I soaked in water, then tacked it to the waxed part of the floor.

For the cover I bored four two-inch holes, and covered them with wire cloth except one through which I shook the bees. I covered this with wire cloth. On this cover I fastened a convenient handle for the railroad men to use in lifting the package. I also put a strip of paper on the cover, with the following directions: "Live bees. Do not cover tightly. No danger if handled reasonably."

Hartville, O., Nov. 5. J. A. KREIGHBAUM.

[Double wire cloth, the same as is used in ordinary queen-cages, is hardly sufficient protection. Single wire cloth, with a wooden grating, is better, in our judgment. Packages that go by express or parcel post should be so protected that the sharp corners of the box or other articles will not punch through and ruin the contents. In the case of a package containing bees, even a small hole would cause no end of trouble, to say nothing of the loss of bees. The wooden gratings that we recommend are narrow slats about $\frac{3}{8} \times \frac{1}{4}$ inch thick. In the case of larger packages, the strips should be $\frac{3}{8}$ or even heavier.—ED.]

How Does the Queen Face when Laying?

I have been waiting patiently to see whether some one of the lynx-eyed American bee-students would not point out a peculiarity in the piece of comb illustrated on page 657, Oct. 15. The cells are built with two sides horizontal. Very unorthodox of the bees! You are scientifically cautious, Mr. Editor, when you remark on page 647 that "it is safe to say that a queen while she is laying an egg *usually* has her head toward the upper part of the comb;" but I can not agree with you, after all. I have had two or more observatories in constant use for the last three or four summers, and we have often watched the laying of the queens. Whatever attitude she may be in when she inserts her abdomen into the cell, she almost invariably twists round before the actual process of laying is performed, in such a way that her head is toward the *lower* part of the comb. As a rule, too, she is not looking right downward, but has her head turned slightly toward the end of the frame to her right.

Perhaps you will allow me to express my keen appreciation of GLEANINGS, and the way it is conducted. I begin almost to be personally acquainted with the editors and some of the contributors, and I just love the kindly way in which they sit upon each other when one has been caught napping. I am glad to see that you have a due appreciation of Mr. Sladen. So far as I can see, he should never have been allowed to go to America. There, now!

JOHN ANDERSON, M. A., B. Sc.

Stornoway, Scotland.

[We have examined many pieces of naturally built comb, and have found that, while the two parallel sides are usually vertical, still there are a number of exceptions. We may say, then, that a naturally built comb of both types is found, but that the predominating type is that in which the two parallel sides are vertical.

Concerning the position of the queen when she is laying, there are so many exceptions to any one rule that perhaps we put the matter a little too strong, even in our general statement to which you refer. Two of our queen-breeders agreed that the queen usually has her head toward the top. However, if we are not correct in this we shall be glad to know it.—ED.]

Exhibits at the Oklahoma State Fair

We noticed your error in the display picture on p. 811, Dec. 15; also your correction on editorial page, Jan. 1, with Mr. Van De Mark's letter quoted therein. The only part of Mr. V.'s letter to which we could possibly take exception is his statement that "there were four others nearly as good," and presumes he means to include our own exhibit in the four.

The records of the State Fair Association will show that of the nineteen classes offered for bees, honey, wax, and allied products, we entered seventeen, winning a ribbon in every class we entered, getting nine firsts. The other firsts were awarded, five to Mr. Bartholomew, four to Mr. Crouch, and one to Mr. Burrage. After winning as many firsts as any other two exhibitors in as big a honey show as this, we dislike very much to be placed in the "also ran" class.

Noble, Okla., Jan. 10.

GAREE & GAREE.

Danger of a Lack of Stores Toward Spring

Bees are wintering finely. Some beekeepers will be troubled toward spring by a shortage of winter supply of honey in colonies. Clover is very promising up to date. A good stand of white clover is to be seen in every pasture and field in which it is allowed to grow. The season of 1913 promises to be a good one in my locality.

Unionville, Mo., Jan. 24.

FRED H. DRURY.

Our Homes

A. I. ROOT

To him that overcometh will I give to eat of the tree of life, which is in the midst of the paradise of God.—REV. 2:7.

Do ye not yet understand, neither remember the five loaves of the five thousand, and how many baskets ye took up? neither the seven loaves of the four thousand, and how many baskets ye took up?—MATT. 16:9, 10.

(A sequel to the *Home Papers* in the Jan. 15th issue.)

In the second and third chapter of Revelation there are some glorious and wonderful promises to those who "overcome." I wish the readers of GLEANINGS would look them up. I have chosen one of them for my text for this Home paper; and as I dictate here the first page of that Home paper (that was lost) I do it to illustrate how many times in this busy life it is necessary to exercise great patience and perseverance, and holding on. Huber has explained that it was the intention of the Root Company to send me a dictaphone in order to help me to keep up my Home Papers while I was in Florida during the winter. I was told arrangements were made so the dictaphone would probably be here early in November about as soon as we arrived; but after going to the express office again and again, and not finding any thing of the dictaphone, I wrote to Huber. He replied, and said he supposed it had been sent promptly long ago. This was somewhere about the first of December. The company, however, without giving any explanation of their remissness, finally wrote that they had finally forwarded the dictaphone to my address. Then I commenced going to the express office again and again, inquiring for something for A. I. Root. Being told continually that there was nothing, I finally, one day, remonstrated. I said, "Look here, friends, a dictaphone has been shipped to me from Cleveland. It is an instrument worth something like \$100 or more, and it is in a large box, and it seems to me it *must* be here somewhere."

At this the agent replied, "Oh! it's a big box that you wanted, is it? Well, I remember there is something of this sort here, after all, and it has been here some time."

When he hunted it up he found it was directed to The A. I. Root Co. instead of to A. I. Root, and this gave him an excuse for saying, over and over again, there was nothing for me. I got the box home as soon as possible; and then, in order to be sure that the instrument was not injured in any way, I unpacked it very carefully myself, looking all the while for some directions for setting it up and handling it. Not a scrap of any thing could be found; neither was there a

mouthpiece anywhere in the package to use for dictation. I wrote a remonstrance to Huber, and he said something like this: "As the machine was expensive and complicated, the manufacturers never had furnished printed directions for use, but they always sent a man along to instruct the purchaser how to operate and see that he got along all right." As they had already sold the A. I. Root Company several machines, they probably supposed that every member of the firm ought to know how to use them. And this, in fact, is true. Several times last summer Huber did remind me that if I was going to use a dictaphone down in Florida I had better come into the office and practice on it awhile; but I was so busy in building that bungalow that it was put off and neglected. It is true, however, that I did have one down here a year ago, and under Ernest's tuition I dictated a little matter on it. The fact is, I somehow dreaded using the machine, feeling a sort of embarrassment talking to a piece of "machinery" instead of talking to my long-time friend and standby, W. P. Root, who has for so many years taken down all of my dictation. My correspondence was already far behind. I had a lot of things that I wanted to say to my readers since coming here to Florida, and it was of the greatest importance that the dictaphone be got in trim. Perhaps I might explain right here that for many years past it has been a very hard matter for me to use my right arm and do much writing. I can drive nails and hoe corn and "fuss with chickens" all right; but when I come to get a pen or pencil in my right hand and sit down to the desk, there is a sort of writer's paralysis that has troubled me more or less for forty years. There was no way but to "cipher out" how to use the complicated instrument, even if I did feel much hesitation in undertaking to pull to pieces any thing so complicated and difficult. I was tempted many times to give it up; but then I recalled how it spoiled my enthusiasm and energy to acknowledge myself defeated in any praiseworthy undertaking. It really *hurts* me, and for that matter it hurts *anybody*, to acknowledge himself defeated, and give up in something that really *ought* to be done. Under the circumstances the dictaphone seemed to be almost the only outlet that would permit me to keep up my department of the journal, and was almost the only way to continue to lend a helping hand to those who love poultry, high-pressure gardening, and

the different branches that I have been so long writing. Perhaps I may confess to you that I prayed over the matter again and again, asking the dear Lord to give me back the skilled and expert use of that right hand for just a little while. I thought of the little couplet:

Backward, turn backward,
O time, in thy flight;
Make me a child again
Just for to-night.

Will our readers now turn to page 68, GLEANINGS for Jan. 15? * The broken cylinder must evidently have cut short a part of that concluding sentence, and Huber ended it for me, for I had the speaking-tube already in my hand but could get only a faint response. I recalled that in our Medina home office I frequently heard the girls listening to the dictaphone when it could be heard plainly several feet away from them: and I knelt down as I told you, and asked the dear Lord to show me how to make the machine speak as plainly as it did back in my Medina home. Some of you may feel inclined to smile at my faith that my prayer would be answered. Perhaps I can make it sound a little more reasonable to you with this explanation. After having *prayed* over things I often seem to be impressed to examine more thoroughly in certain directions that I had failed to notice critically before. After getting up, or as soon as I arose, I felt impressed to get Huber's letter of instructions, and go over it a little more carefully and see if I could not find some clue to the trouble there. I saw now almost at once where he told me to pull a certain lever over toward me when I wanted to dictate. Now, as this lever could not come over toward me because there was a steel post or stud in the way that seemed immovable, I concluded that he must have made a mistake, and he meant to push it *from* me instead of pulling it toward me. At this time, however, I grasped hold of that little steel post once more, and finally found that I could turn it around; and after pulling a little harder I found it slipped back out of the way. Mrs. Root came over just at this time, and I told her we might rejoice, for my troubles were over. She replied, "Are you very sure?"

"Yes, I'm sure that my prayer is answered."

Once more I started up and called out "Helloa! helloa!" and the response came like an echo so plainly that it could be

heard all over the room. Through the dictaphone I thanked God for having delivered me out of my troubles, and finally ended by singing an old favorite hymn. I am going to give you one verse right here of that old hymn, dear friends. I wish it were *possible* for you to hear my voice as well as read the words in print. Perhaps it will be possible in time to come, as our good friend Edison is just now at work on something quite similar.

Oh to grace how great a debtor
Daily I'm constrained to be!
Let thy goodness, like a fetter,
Bind my wandering heart to thee.

The words came back full and clear, and seemed like a benediction.

Two or three years ago our people in Medina sent word to me, while down here in Florida, that they wanted me to employ the best artist I could find and get a good picture of myself to be put into GLEANINGS. I kept putting it off, but finally they urged so that I went to work to get a disagreeable duty off my mind. First, I went to a good barber and told him I wanted him to take plenty of time and fix me up in the best style he could so that I could have a picture taken to put in print. He was an *Englishman*, and was (therefore?) in the *habit* of doing good and faithful work. Then I went to the photographer and told him something the same thing. He took, perhaps, half a dozen pictures, and then touched them up with all the skill he possessed, and submitted one of them to me for my approval. Now, I was greatly rejoiced to find out that he had made a real good-looking man of my poor old self. In fact, it was so much better looking than I am really that my friends and relatives all said that it didn't look like me, and on this account it never was given in GLEANINGS; but I always felt bad about it. May be I can give it to you yet if some of you care enough about the matter.

But now in regard to the dictaphone. Mrs. Root declared right away that it was beautifully clear, but that the voice didn't sound like mine at all, and I agreed with her. I told her that I should never know that it was my voice. In fact, I never before was aware that I had a voice of so much volume and strength. Now please, dear friends, don't think me presuming or puffed up when I say that, after the kind words which have come to me all these years from the readers of GLEANINGS in regard to my allotted work in this world, it occurs to me that it might be a pleasure for the readers of GLEANINGS to hear my voice. Well, I don't know just how it is going to

* There is also a period in the wrong place on p. 67, toward the close of the page. Instead of "He applied to the Savior again and again," it should be, "He applied to the Savior again. And again the Master," etc.

be brought about; but I have faith to believe that the time is coming when God will give us the means of talking to friends thousands of miles away, great numbers of them; that he will also give some invention to enable the readers to hear the tones of our voice when they are reading the printed words. This thing has already come to pass to a certain extent, for I suppose you are fully aware that these cylinders can be shipped thousands of miles, especially if they are carefully packed, and enable friends not only to review the words of all those we have read about and loved, but also to hear the very tones of voice of people who have been long years dead and laid in their graves. "Rejoice! May the Lord be praised for the victories of men."

Let us go over briefly the overcoming of difficulties before I could talk to you as I do now through this beautiful instrument. First, the order to ship it to my Florida home was overlooked or neglected. Second, after it was shipped the agent here at Bradentown kept telling me "Nothing for A. I. Root." When it finally came, there was no mouthpiece with which to dictate; and the carriage failed to move. When, after hard work and earnest prayer, I succeeded in overcoming this trouble, the machine wouldn't talk plainly and clearly. Finally, in answer to my prayer, I discovered that the little steel post that seemed to be riveted so firmly *could* be lifted back to let the lever come forward. Once more, in my triumph, after I succeeded in making it work to perfection, and had used up the cylinder in thanking and praising God for the victory, those cylinders were smashed by the express company in its transit to Medina. Perhaps I was somewhat at fault in my method of packing; but I had large printed labels pasted all over the package, saying, "Fragile, handle with care." The express agent or handlers, however, seemed to pay no attention to this caution.* Both of the first two packages were smashed and rendered almost useless. After we got it working so finely, Mrs. Root suggested that perhaps there was a *providence* in it after all; for had not all these troubles occurred I would not have been obliged to pull the machine all to pieces and study its construction so fully, so that now I was perfect master of every detail of the complicated apparatus. Yes, this *is* true; and this trying experience I have had is probably worth much more than all it cost. But now, dear

friends, comes a much greater and grander truth. In praying that I might have the wisdom to surmount the obstacles that lay before me I came into closer touch with my Savior than perhaps I had ever been before. In fact, for several days afterward it seemed as if a new companionship was with me, and by my side, no matter what I was doing. Scripture texts came to me in great numbers that I had never particularly noticed before, and seemed to shine out with a new and wondrous promise. I presume this experience will not only give me more faith, but will, perhaps, make the Bible promises brighter, many of them, for the rest of my life. For instance, I recalled the time when the disciples were worried because they thought the Master was reproving them for forgetting to bring bread. In one of our texts I have recalled the circumstance. He remonstrated with them for not having *remembered* how he fed the multitudes with the loaves and fishes, and for not remembering that all the resources of this *great universe* were at his beck and call. The man, woman, or child who has no difficulties or trials to overcome can never arise to his *fullest and greatest and grandest* development. "To him that overcometh I will give to eat of the tree of life, which is in the midst of the paradise of God."

POULTRY-KEEPING ON OUR CONVERGENT POULTRY-RANCH IN FLORIDA.

When we arrived here the first week in November my first work was to get our fifty pullets from my neighbor Abbott and install them on our place. The pullets remembered their old home of six months before, without question; for, the very first thing, they sought out their familiar scratching-places and places to roost, watering-places, etc. As they had scarcely finished moulting, for a few days we got very few eggs, perhaps only three or four to start with. As eggs, however, were forty cents a dozen the pullets very soon began to pay for their feed. At the present time (first week in January) we are getting from fifteen to twenty eggs. I might remark right here that eighteen ducks have given us about as many eggs as fifty pullets so far; and as the ducks get a large part of their feed from the canal I have spoken of, they are more profitable than chickens so far. With the fifty pullets was a three-year-old Buttercup rooster. He, too, was in the midst of a moult. I suppose it is not very good management to expect a three-year-old rooster to give eggs with very high fertility when given as many as fifty pul-

* I notice the U. S. Express Co. furnishes its agents a good-sized label, reading as follows: "Glass: with great care. Put this upon every package of glass." Now, the agent who would deliberately ruin a package thus labeled should be severely dealt with.

lets. Somehow or other, I got into the way of reasoning that the male bird didn't try to serve any more than the pullets that were laying. He is very quick to single out a hen that laid an egg and serve her; but does he serve or undertake to serve the others that don't lay at all—that is, where he has a yard full of pullets? I have hunted the poultry journals for years in regard to this, but have never been able to find a single thing touching the subject. Some of you may remember that I paid one dollar for a secret for getting strong fertility. The secret was this: Fix your nests or gate so that, when a hen has laid an egg, she will go into the yard where the male bird is confined; and as he, as a matter of course, serves her promptly as soon as she comes into his "harem," you would naturally suppose that the eggs would be all fertile. Now, this secret seemed to take the ground that the male bird serves only the laying hens. Well, my first hatch from the incubator that holds fifty eggs was only thirty eggs fertile. Thinking the trouble was because moulting was so near, I tried it again, putting in sixty eggs* for the first five days until testing time. Although the hens were mostly over their moult this time, I got only thirty fertile eggs from sixty. As I can't stand this sort of work I divided my hens into two yards, and have put a brisk young Buttercup rooster in the other half, and we expect better fertility accordingly.

I want to repeat again that I do not believe artificial heat is needed here in our Florida climate for brooders. Fireless brooders properly arranged are certainly all that can be needed for twenty-five or more chicks. I have taken two broods this winter right out of our hot incubator, of course keeping them there about twenty-four hours after they were hatched, and put them directly in the fireless brooder. The second day they would be out running in their little yard, and scratching the bran and sand with which the ground was covered. The next day they were climbing over the sides of the yard and rambling all over the brooder-house. I have repeatedly proved to my satisfaction that artificial heat has a debilitating effect upon the young chicks when they

are able to get along without it. The convergent poultry-yards are proving such a wonderful convenience I wonder how it is that people who keep poultry have been so long without thinking or discovering or getting on to this short cut in the management of poultry and poultry-houses. Think of having the poultry-houses scattered over four or five acres where they can just as well be all in one convergent yard! When the little chicks grow, you can let them out further and further, finally giving them the whole range as far as the fences go. Just now we are building the fences out only as far as the chickens seem to run. As they grow older we build the fences a little further—no cross-fences from one side to the other at all. In this way they can have almost unlimited range, and yet all the feeding and caring for them is done at one central spot. They are all shut up at night in no time at all, compared with the old plan of chasing all around to so many different houses. This inner court where we keep our grain and all our utensils is shut up so that it is almost an impossibility for a rat ever to gain access. There are no mice here; but I am sure it would be an easy matter to fence out mice with comparatively little expense in the far North if this plan is followed. By the aid of a wind-mill we have dripping water and suitable vessels between every two yards, so that the water takes care of itself comparatively. When the watering-dishes need to be washed out it can be done very quickly, as they are all right at hand, and easily pulled out of place.

INSURANCE COMPANIES AGAINST THE DRINK HABIT.

Insurance companies in Great Britain, America, Sweden, Norway, and Germany are discriminating against those who drink, even in moderation. The insurance companies in Germany have issued leaflets and posters showing the detrimental effects of alcohol on the human body. Many insurance companies place total abstinents in a separate division, insuring their lives on cheaper rates. It is manifestly unjust to require that total abstinents shall pay higher insurance rates on account of the losses caused by the drinkers insured by the same company. The discovery of science, that alcohol is a life-destroyer, is arousing many who heretofore have been uninterested in the temperance problem.—*Union Signal*.

Editor American Issue:—Some things you can send through the mail by parcel post are: Eggs, butter, meat, medicine, fruit-trees, oils, ink, candy, milk, or queen bees. Some things you can not send: Obscene literature, poison, snakes, explosives, infernal machines, pistols, disease germs, or intoxicating liquors of any kind. At last the government has made a wise and proper distinction. They are all of a kind.

L. R. H.

I wonder if L. R. H. isn't a beekeeper. Sounds like it.—A. I. R.

* Perhaps I should explain again how I get sixty eggs in a fifty-egg incubator. I do it by standing them on the small end for the first three days. With our bright Florida sunshine I can test them quite easily at three days, and Mrs. Root now agrees that such eggs, as a rule at least, are just as good as any three-day-old eggs for any purpose whatever; but, of course, we never sell them. Since dictating the above I have made two yards of my 50 hens, with a good male in each, and now I get about 50 fertiles out of the 60 eggs. The mother duck with her twelve ducklings flies over the two-foot fence every day, takes a swim in the canal, then comes back, and is a "model mother," even if she is an I. R. duck.